

LIST OF PUBLICATIONS

Vesa Välimäki (Aalto University, Espoo, Finland)

A. Peer-reviewed scientific articles

A.1. Scientific journal articles (105)

1. J. Kahles, F. Esqueda & V. Välimäki, “Oversampling for nonlinear waveshaping: Choosing the right filters,” accepted for publication in *Journal of the Audio Engineering Society*, 2019.
2. A. Mäkivirta, J. Liski & V. Välimäki, “Modeling and delay-equalizing loudspeaker responses,” *Journal of the Audio Engineering Society*, vol. 66, no. 11, pp. 922–934, Nov. 2018.
3. E.-P. Damskägg & V. Välimäki, “Audio time stretching using fuzzy classification of spectral bins,” *Applied Sciences*, vol. 7, no. 12, paper no. 1293, Dec. 2017.
4. B. Bank, J. A. Belloch & V. Välimäki, “Efficient design of a parallel graphic equalizer,” *Journal of the Audio Engineering Society*, vol. 65, no. 10, pp. 817–825, Nov. 2017.
5. F. Stevens, D. T. Murphy, L. Savioja & V. Välimäki, “Modeling sparsely reflecting outdoor acoustic scenes using the waveguide web,” *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 25, no. 8, pp. 1566–1578, Aug. 2017.
6. S. Bilbao, F. Esqueda, J. D. Parker & V. Välimäki, “Antiderivative antialiasing for memoryless nonlinearities,” *IEEE Signal Processing Letters*, vol. 24, no. 7, pp. 1049–1053, July 2017.
7. V. Välimäki, B. Holm-Rasmussen, B. Alary & H.-M. Lehtonen, “Late reverberation synthesis using filtered velvet noise,” *Applied Sciences*, vol. 7, no. 5, paper no. 483, May 2017.
8. V. Välimäki & J. Liski, “Accurate cascade graphic equalizer,” *IEEE Signal Processing Letters*, vol. 24, no. 2, pp. 176–180, Feb. 2017.
9. J. A. Belloch, A. Gonzalez, E. S. Quintana-Ortí, M. Ferrer & V. Välimäki, “GPU-based dynamic wave field synthesis using fractional delay filters and room compensation,” accepted for publication in *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 25, no. 2, pp. 435–447 Feb. 2017.
10. F. Esqueda, S. Bilbao & V. Välimäki, “Aliasing reduction in clipped signals,” *IEEE Transactions on Signal Processing*, vol. 64, no. 20, pp. 5255–5267, Oct. 15, 2016.
11. V. Välimäki & J. D. Reiss, “All about audio equalization: Solutions and frontiers,” *Applied Sciences*, vol. 6, no. 5, paper no. 129, 2016. Open Access paper: <http://www.mdpi.com/2076-3417/6/5/129>.
12. V. Välimäki, A. Franck, J. Rämö, H. Gamper & L. Savioja, “Assisted listening using a headset – Enhancing audio perception in real, augmented, and virtual environments,” *IEEE Signal Processing Magazine*, vol. 32, no. 2, pp. 92–99, Mar. 2015.
13. J. Rämö, B. Bank & V. Välimäki, “High-precision parallel graphic equalizer,” *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 22, no. 12, pp. 1894–1904, Dec. 2014.
14. S. D’Angelo & V. Välimäki, “Generalized Moog ladder filter: Part II – Explicit nonlinear model through a novel delay-free loop implementation method,” *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 22, no. 12, pp. 1873–1883, Dec. 2014.
15. S. D’Angelo & V. Välimäki, “Generalized Moog ladder filter: Part I – Linear analysis and parameterization,” *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 22, no. 12, pp. 1825–1832, Dec. 2014.
16. J. Timoney, J. Pekonen, V. Lazzarini & V. Välimäki, “Dynamic signal phase distortion using coefficient-modulated allpass filters,” *Journal of the Audio Engineering Society*, Vol. 62, no. 9, pp. 596–610, Sept. 2014.

17. J. Rämö & V. Välimäki, "Optimizing a high-order graphic equalizer for audio processing," *IEEE Signal Processing Letters*, vol. 21, no. 3, pp. 301–305, Mar. 2014.
18. A. Franck & V. Välimäki, "Higher-order integrated wavetable and sampling synthesis," *Journal of the Audio Engineering Society*, vol. 61, no. 9, pp. 624–636, Sept. 2013.
19. J. Parker & V. Välimäki, "Linear dynamic range reduction of musical audio using an allpass filter chain," *IEEE Signal Processing Letters*, vol. 20, no. 7, pp. 669–672, July 2013.
20. L. Gabrielli, V. Välimäki, H. Penttinen, S. Squartini & S. Bilbao, "A digital waveguide based approach for Clavinet modeling and synthesis," *EURASIP Journal on Applied Signal Processing*, vol. 2013, no. 1, 2013.
21. V. Välimäki, H.-M. Lehtonen & M. Takanen, "A perceptual study on velvet noise and its variants at different pulse densities," *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 21, no. 7, pp. 1481–1488, July 2013.
22. S. D'Angelo, J. Pakarinen & V. Välimäki, "New family of wave-digital triode models," *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 21, no. 2, pp. 313–321, Feb. 2013.
23. R. C. D. Paiva, J. Pakarinen & V. Välimäki, "Acoustics and modeling of pickups," *Journal of the Audio Engineering Society*, vol. 60, no. 10, pp. 768–782, Oct. 2012.
24. H.-M. Lehtonen, J. Pekonen & V. Välimäki, "Audibility of aliasing distortion in sawtooth signals and its implications for oscillator algorithm design," *Journal of the Acoustical Society of America*, vol. 132, no. 4, pp. 2721–2733, Oct. 2012.
25. R. C. D. Paiva, S. D'Angelo, J. Pakarinen & V. Välimäki, "Emulation of operational amplifiers and diodes in audio distortion circuits," *IEEE Transactions on Circuits and Systems – II: Express Briefs*, vol. 59, no. 10, pp. 688–692, Oct. 2012.
26. J. Rämö & V. Välimäki, "Digital augmented reality audio headset," *Journal of Electrical and Computer Engineering*, special issue on "Immersive Speech and Audio Communication," vol. 2012, Article ID 457374, 13 pages Oct. 2012. Available online at <http://www.hindawi.com/journals/jece/2012/457374/>.
27. V. Välimäki, J. D. Parker, L. Savioja, J. O. Smith & J. S. Abel, "Fifty years of artificial reverberation," *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 20, no. 5, pp. 1421–1448, July 2012.
28. K.-S. Lee, J. S. Abel, V. Välimäki, T. Stilson & D. P. Berners, "The switched convolution reverberator," *Journal of the Audio Engineering Society*, vol. 60, no. 4, pp. 227–236, April 2012.
29. G. Varni, G. Dubus, S. Oksanen, G. Volpe, M. Fabiani, R. Bresin, J. Kleimola, V. Välimäki & A. Camurri, "Interactive sonification of synchronisation of motoric behaviour in social active listening to music with mobile devices," *Journal on Multimodal User Interfaces*, vol. 5, no. 3–4, pp. 157–173, April 2012.
30. J. Pekonen, J. Nam, J. O. Smith & V. Välimäki, "Optimized polynomial spline basis function design for quasi-bandlimited classical waveform synthesis," *IEEE Signal Processing Letters*, vol. 19, no. 3, pp. 159–162, Mar. 2012.
31. J. Kleimola & V. Välimäki, "Reducing aliasing from synthetic audio signals using polynomial transition regions," *IEEE Signal Processing Letters*, vol. 19, no. 2, pp. 67–70, Feb. 2012.
32. V. Välimäki, J. Pekonen & J. Nam, "Perceptually informed synthesis of bandlimited classical waveforms using integrated polynomial interpolation," *Journal of the Acoustical Society of America*, vol. 131, no. 1, pt. 2, pp. 974–986, Jan. 2012.
33. N. Lindroos, H. Penttinen & V. Välimäki, "Parametric electric guitar synthesis," *Computer Music Journal*, vol. 35, no. 3, pp. 18–27, Fall 2011.
34. A. Pérez Carrillo, J. Bonada, J. Pätynen & V. Välimäki, "Method for measuring violin sound radiation based on bowed glissandi and its application to sound synthesis," *Journal of the Acoustical Society of America*, vol. 130, no. 2, pp. 1020–1029, Aug. 2011.

35. J. Pakarinen, V. Välimäki, F. Fontana, V. Lazzarini & J. S. Abel, “Recent advances in real-time musical effects processing and synthesis,” *EURASIP Journal on Advances in Signal Processing*, vol. 2011, article ID 940784, 15 pages, 2011.
36. R. C. D. de Paiva, J. Pakarinen, V. Välimäki & M. Tikander, “Real-time audio transformer emulation for virtual tube amplifiers,” *EURASIP Journal on Advances in Signal Processing*, vol. 2011, article ID 347645, 15 pages, 2011.
37. J. Pekonen, V. Lazzarini, J. Timoney, J. Kleimola & V. Välimäki, “Discrete-time modelling of the Moog sawtooth oscillator waveform,” *EURASIP Journal on Advances in Signal Processing*, vol. 2011, article ID 785103, 15 pages, 2011.
38. J. Kleimola, V. Lazzarini, V. Välimäki & J. Timoney, “Feedback amplitude modulation synthesis,” *EURASIP Journal on Advances in Signal Processing*, vol. 2011, article ID 434378, 18 pages, 2011.
39. L. Savioja, V. Välimäki & J. O. Smith, “Audio signal processing using graphics processing units,” *Journal of the Audio Engineering Society*, vol. 59, no. 1/2, pp. 3–19, Jan./Feb. 2011.
40. V. Välimäki, J. Parker & J. S. Abel, “Parametric spring reverberation effect,” *Journal of the Audio Engineering Society*, vol. 58, no. 7/8, pp. 547–562, July/Aug. 2010.
41. N. Lee, J. O. Smith & V. Välimäki, “Analysis and synthesis of coupled vibrating strings using a hybrid modal-waveguide synthesis model,” *IEEE Transactions on Audio, Speech and Language Processing*, vol. 18, no. 4, pp. 833–842, May 2010.
42. J. Nam, V. Välimäki, J. S. Abel & J. O. Smith, “Efficient antialiasing oscillator algorithms using low-order fractional delay filters,” *IEEE Transactions on Audio, Speech and Language Processing*, vol. 18, no. 4, pp. 773–785, May 2010.
43. V. Välimäki, J. Nam, J. O. Smith & J. S. Abel, “Alias-suppressed oscillators based on differentiated polynomial waveforms,” *IEEE Transactions on Audio, Speech and Language Processing*, vol. 18, no. 4, pp. 786–798, May 2010.
44. J. S. Abel, V. Välimäki & J. O. Smith, “Robust, efficient design of allpass filters for dispersive string sound synthesis,” *IEEE Signal Processing Letters*, vol. 17, no. 4, pp. 406–409, April 2010.
45. H.-M. Lehtonen, A. Askenfelt & V. Välimäki, “Analysis of the part-pedaling effect in the piano,” *Journal of the Acoustical Society of America Express Letters*, vol. 126, no. 2, pp. EL49–EL54, Aug. 2009.
46. V. Välimäki, J. S. Abel & J. O. Smith, “Spectral delay filters,” *Journal of the Audio Engineering Society*, vol. 57, no. 7/8, pp. 521–531, July/Aug. 2009.
47. R. Milovanov, M. Huotilainen, P. A. A. Esquef, V. Välimäki & M. Tervaniemi, “The role of musical aptitude and language skills in preattentive duration determination in school-aged children,” *Neuroscience Letters*, vol. 460, no. 2, pp. 161–165, 28 Aug. 2009.
48. J. Rauhala, M. Laurson, V. Välimäki, V. Norilo & H.-M. Lehtonen, “Parametric piano synthesizer,” *Computer Music Journal*, vol. 32, no. 4, pp. 17–30, Winter 2008.
49. J. Pakarinen, T. Puputti & V. Välimäki, “Virtual slide guitar,” *Computer Music Journal*, vol. 32, no. 3, pp. 42–54, Fall 2008.
50. H.-M. Lehtonen, V. Välimäki & T. I. Laakso, “Canceling and selecting partials from musical tones using fractional-delay filters,” *Computer Music Journal*, vol. 32, no. 2, pp. 43–56, Summer 2008. Invited paper.
51. V. Välimäki, S. González, O. Kimmelma & J. Parviainen, “Digital audio antiquing—Signal processing methods for imitating the sound quality of historical recordings,” *Journal of the Audio Engineering Society*, vol. 56, no. 3, pp. 115–139, Mar. 2008.

52. R. Milovanov, M. Huotilainen, V. Välimäki, P. Esquef & M. Tervaniemi, “Musical aptitude and second language pronunciation skills in school-aged children: neural and behavioral evidence,” *Brain Research*, vol. 1194, no. 15 February 2008, pp. 81–89, Feb. 2008.
53. G. Widmer, D. Rocchesso, V. Välimäki, C. Erkut, F. Gouyon, D. Pressnitzer, H. Penttinen, P. Polotti & G. Volpe, “Sound and music computing: Research trends and some key issues,” *Journal of New Music Research*, vol. 36, no. 3, pp. 169–184, Sept. 2007. (Published in March 2008)
54. V. Välimäki & A. Haghparast, “Fractional delay filter design based on truncated Lagrange interpolation,” *IEEE Signal Processing Letters*, vol. 14, no. 11, pp. 816–819, Nov. 2007.
55. H.-M. Lehtonen, H. Penttinen, J. Rauhala & V. Välimäki, “Analysis and modeling of piano sustain-pedal effects,” *Journal of the Acoustical Society of America*, vol. 122, no. 3, pp. 1787–1797, Sept. 2007.
56. J. Rauhala, H.-M. Lehtonen & V. Välimäki, “Fast automatic inharmonicity estimation algorithm,” *Journal of the Acoustical Society of America Express Letters*, vol. 121, no. 5, pp. EL184–EL189, May 2007.
57. V. Välimäki & A. Huovilainen, “Antialiasing oscillators in subtractive synthesis,” *IEEE Signal Processing Magazine*, vol. 24, no. 2, pp. 116–125, Mar. 2007.
58. J. Rauhala, H.-M. Lehtonen & V. Välimäki, “Toward next-generation digital keyboard instruments,” *IEEE Signal Processing Magazine*, vol. 24, no. 2, pp. 12–20, Mar. 2007.
59. L. Peltola, C. Erkut, P. R. Cook & V. Välimäki, “Synthesis of hand clapping sounds,” *IEEE Trans. Audio, Speech, and Language Processing*, vol. 15, no. 3, pp. 1021–1029, Mar. 2007.
60. K. I. Krohn, E. Brattico, V. Välimäki & M. Tervaniemi, “Neural representations of the hierarchical scale pitch structure,” *Music Perception*, vol. 24, no. 3, pp. 281–296, Feb. 2007.
61. H. Penttinen, J. Pakarinen, V. Välimäki, M. Laurson, H. Li & M. Leman, “Model-based sound synthesis of the guqin,” *Journal of the Acoustical Society of America*, vol. 120, no. 6, pp. 4052–4063, Dec. 2006.
62. V. Välimäki & A. Huovilainen, “Oscillator and filter algorithms for virtual analog synthesis,” *Computer Music Journal*, vol. 30, no. 2, pp. 19–31, summer 2006.
63. J. Rauhala & V. Välimäki, “Tunable dispersion filter design for piano synthesis,” *IEEE Signal Processing Letters*, vol. 13, no. 5, pp. 253–256, May 2006.
64. V. Välimäki, J. Pakarinen, C. Erkut & M. Karjalainen, “Discrete-time modeling of musical instruments,” *Reports on Progress in Physics*, vol. 69, no. 1, pp. 1–78, Jan. 2006. Invited paper.
65. H. Penttinen, C. Erkut, J. Pölkki, V. Välimäki & M. Karjalainen, “Design and analysis of a kantele with improved sound radiation,” *Acta Acustica united with Acustica*, vol. 91, no. 2, pp. 261–268, Mar./Apr. 2005. Special issue on string instruments.
66. J. Pakarinen, V. Välimäki & M. Karjalainen, “Physics-based methods for modeling nonlinear vibrating strings,” *Acta Acustica united with Acustica*, vol. 91, no. 2, pp. 312–325, Mar./Apr. 2005. Special issue on string instruments.
67. V. Välimäki, “Discrete-time synthesis of the sawtooth waveform with reduced aliasing,” *IEEE Signal Processing Letters*, vol. 12, no. 3, pp. 214–217, Mar. 2005.
68. A. Kelloniemi, L. Savioja & V. Välimäki, “Spatial filter-based absorbing boundary for the 2-D digital waveguide mesh,” *IEEE Signal Processing Letters*, vol. 12, no. 2, pp. 126–129, Feb. 2005.
69. H. Penttinen & V. Välimäki, “A time-domain approach to estimating the plucking point of guitar tones obtained with an under-saddle pickup,” *Applied Acoustics*, vol. 65, no. 12, pp. 1207–1220, Dec. 2004. Special issue on musical acoustics.
70. V. Välimäki, “Physics-based modeling of musical instruments,” *Acta Acustica united with Acustica*, vol. 90, no. 4, pp. 611–617, July/Aug. 2004. Invited paper.

71. V. Välimäki, H. Penttinen, J. Knif, M. Laurson & C. Erkut, "Sound synthesis of the harpsichord using a computationally efficient physical model," *EURASIP Journal on Applied Signal Processing*, vol. 4, no. 7, pp. 934–948, June 2004. Special issue on model-based sound synthesis.
72. E. Brattico, M. Tervaniemi, V. Välimäki, T. van Zuijlen & I. Peretz, "Cortical correlates of acquired deafness to dissonance," *Annals of the New York Academy of Sciences*, vol. 999, pp. 158–160, Dec. 2003.
73. P. Esquef, M. Karjalainen & V. Välimäki, "Frequency-zooming ARMA modeling for analysis of noisy string instrument tones," *EURASIP Journal on Applied Signal Processing*, vol. 3, no. 10, pp. 953–967, Sept. 2003. Special issue on digital audio for multimedia communications.
74. L. Savioja & V. Välimäki, "Interpolated rectangular 3-D digital waveguide mesh algorithms with frequency warping," *IEEE Transactions on Speech and Audio Processing*, vol. 11, no. 6, pp. 783–790, Nov. 2003.
75. J. Riionheimo & V. Välimäki, "Parameter estimation of a plucked string synthesis model using genetic algorithm with perceptual fitness calculation," *EURASIP Journal on Applied Signal Processing*, vol. 3, no. 8, pp. 791–805, July 2003. Special issue on genetic and evolutionary computation for signal processing and image analysis.
76. P. A. A. Esquef, L. W. P. Biscainho & V. Välimäki, "An efficient algorithm for the restoration of audio signals corrupted with low-frequency pulses," *Journal of the Audio Engineering Society*, vol. 51, no. 6, pp. 502–517, June 2003.
77. A. Mäkivirta, P. Antsalo, M. Karjalainen & V. Välimäki, "Modal equalization of loudspeaker-room responses at low frequencies," *Journal of the Audio Engineering Society*, vol. 51, no. 5, pp. 324–343, May 2003.
78. V. Välimäki, M. Laurson & C. Erkut, "Commutated waveguide synthesis of the clavichord," *Computer Music Journal*, vol. 27, no. 1, pp. 71–82, Spring 2003.
79. B. Bank & V. Välimäki, "Robust loss filter design for digital waveguide synthesis of string tones," *IEEE Signal Processing Letters*, vol. 10, no. 1, pp. 18–20, Jan. 2003.
80. H. Järveläinen, T. Verma & V. Välimäki, "Perception and adjustment of pitch in inharmonic string instrument tones," *Journal of New Music Research*, vol. 31, no. 3, pp. 311–319, 2002.
81. M. Karjalainen, P. A. A. Esquef, P. Antsalo, A. Mäkivirta & V. Välimäki, "Frequency-zooming ARMA modeling of resonant and reverberant systems," *Journal of the Audio Engineering Society*, vol. 50, no. 12, pp. 1012–1029, Dec. 2002.
82. M. Karjalainen, P. Antsalo, A. Mäkivirta, T. Peltonen & V. Välimäki, "Estimation of modal decay parameters from noisy response measurements," *Journal of the Audio Engineering Society*, vol. 50, no. 11, pp. 867–878, Nov. 2002.
83. C. Erkut, M. Karjalainen, P. Huang & V. Välimäki, "Acoustical analysis and model-based sound synthesis of the kantele," *Journal of the Acoustical Society of America*, vol. 112, no. 4, pp. 1681–1691, Oct. 2002.
84. P. Esquef, V. Välimäki & M. Karjalainen, "Restoration and enhancement of solo guitar recordings based on sound source modeling," *Journal of the Audio Engineering Society*, vol. 50, no. 4, pp. 227–236, Apr. 2002.
85. M. Karjalainen, T. Tolonen, V. Välimäki, C. Erkut, M. Laurson & J. Hiipakka, "An overview of new techniques and effects in model-based sound synthesis," *Journal of New Music Research*, vol. 30, no. 5, pp. 203–212, 2001.
86. M. Laurson, C. Erkut, V. Välimäki & M. Kuuskankare, "Methods for modeling realistic playing in acoustic guitar synthesis," *Computer Music Journal*, vol. 25, no. 3, pp. 38–49, Fall 2001.
87. H. Järveläinen, V. Välimäki & M. Karjalainen, "Audibility of the timbral effects of inharmonicity in stringed instrument tones," *Acoustics Research Letters Online (ARLO)*, vol. 2, no. 3, pp. 79–84, July 2001. Available at <http://ojs.aip.org/ARLO/>.

88. L. Savioja & V. Välimäki, “Multiwarping for enhancing the frequency accuracy of digital waveguide mesh simulations,” *IEEE Signal Processing Letters*, vol. 8, no. 5, pp. 134–136, May 2001.
89. M. Makundi, T. I. Laakso & V. Välimäki, “Efficient tunable IIR and allpass filter structures,” *IEE Electronics Letters*, vol. 37, no. 6, pp. 344–345, Mar. 15, 2001.
90. M. Karjalainen, V. Välimäki, H. Penttinen & H. Saastamoinen, “DSP equalization of electret film pickup for the acoustic guitar,” *Journal of the Audio Engineering Society*, vol. 48, no. 12, pp. 1183–1192, Dec. 2000.
91. A. Härmä, M. Karjalainen, L. Savioja, V. Välimäki, U. K. Laine & J. Huopaniemi “Frequency-warped signal processing for audio applications,” *Journal of the Audio Engineering Society*, vol. 48, no. 11, pp. 1011–1031, Nov. 2000.
92. T. Tolonen, V. Välimäki & M. Karjalainen, “Modeling of tension modulation nonlinearity in plucked strings,” *IEEE Transactions on Speech and Audio Processing*, vol. 8, no. 2, pp. 300–310, May 2000.
93. T. I. Laakso, A. Tarczynski, N. P. Murphy & V. Välimäki, “Polynomial filtering approach to reconstruction and noise reduction of nonuniformly sampled signals,” *EURASIP Signal Processing*, vol. 80, no. 4, pp. 567–575, Apr. 2000.
94. L. Savioja & V. Välimäki, “Reducing the dispersion error in the digital waveguide mesh using interpolation and frequency-warping techniques,” *IEEE Transactions on Speech and Audio Processing*, vol. 8, no. 2, pp. 184–194, Mar. 2000.
95. L. Savioja & V. Välimäki, “Reduction of the dispersion error in the triangular digital waveguide mesh using frequency warping,” *IEEE Signal Processing Letters*, vol. 6, no. 3, pp. 58–60, Mar. 1999.
96. T. I. Laakso & V. Välimäki, “Energy-based effective length of the impulse response of a recursive filter,” *IEEE Transactions on Instrumentation and Measurement*, vol. 48, no. 1, pp. 7–17, Feb. 1999.
97. S. Uosukainen & V. Välimäki, “Unidirectional JMC actuators in the active attenuation of noise in ducts,” *Acustica – Acta Acustica*, vol. 85, no. 1, pp. 63–77, Jan./Feb. 1999.
98. V. Välimäki & T. I. Laakso, “Suppression of transients in variable recursive digital filters with a novel and efficient cancellation method,” *IEEE Transactions on Signal Processing*, vol. 46, no. 12, pp. 3408–3414, Dec. 1998.
99. M. Karjalainen, V. Välimäki & T. Tolonen, “Plucked-string models: from the Karplus–Strong algorithm to digital waveguides and beyond,” *Computer Music Journal*, vol. 22, no. 3, pp. 17–32, fall 1998. Available at <http://www.acoustics.hut.fi/~vpv/publications/cmj98.htm>.
100. V. Välimäki & T. Tolonen, “Development and calibration of a guitar synthesizer,” *Journal of the Audio Engineering Society*, vol. 46, no. 9, pp. 766–778, Sept. 1998.
101. J. Mackenzie, J. Huopaniemi, V. Välimäki & I. Kale, “Low-order modeling of head-related transfer functions using balanced model truncation,” *IEEE Signal Processing Letters*, vol. 4, no. 2, pp. 39–41, Feb. 1997.
102. V. Välimäki & T. Takala, “Virtual musical instruments—Natural sound using physical models,” *Organised Sound*, vol. 1, no. 2, pp. 75–86, Oct. 1996.
103. V. Välimäki, J. Huopaniemi, M. Karjalainen & Z. Jánosy, “Physical modeling of plucked string instruments with application to real-time sound synthesis,” *Journal of the Audio Engineering Society*, vol. 44, no. 5, pp. 331–353, May 1996.
104. T. I. Laakso, V. Välimäki, M. Karjalainen & U. K. Laine, “Splitting the unit delay—Tools for fractional delay filter design,” *IEEE Signal Processing Magazine*, vol. 13, no. 1, pp. 30–60, Jan. 1996.
105. M. Karjalainen, V. Välimäki, B. Hernoux & J. Huopaniemi, “Explorations of wind instruments using digital signal processing and physical modeling techniques,” *Journal of New Music Research*, vol. 24, no. 4, pp. 301–317, Dec. 1995.

A.4. Articles in refereed scientific edited volumes and conference proceedings (178)

1. S. Schlecht, B. Alary, V. Välimäki & E. A. P. Habets, “Optimized velvet-noise decorrelator,” in *Proc. 21st Int. Conf. Digital Audio Effects* (DAFx-18), pp. 87–94, Aveiro, Portugal, Sept. 2018.
2. V. Välimäki, J. Rämö & F. Esqueda, “Creating endless sounds,” in *Proc. 21st Int. Conf. Digital Audio Effects* (DAFx-18), pp. 32–39, Aveiro, Portugal, Sept. 2018.
3. R. Simionato, J. Liski, V. Välimäki & F. Avanzini, “A virtual tube delay effect,” in *Proc. 21st Int. Conf. Digital Audio Effects* (DAFx-18), pp. 361–368, Aveiro, Portugal, Sept. 2018.
4. S. Serafin, S. Dahl, R. Bresin, A. R. Jensenius, R. Unnþórsson & V. Välimäki, “NordicSMC: A nordic university hub on sound and music computing,” in *Proc. 15th Sound and Music Computing Conference* (SMC-18), pp. 124–128, Limassol, Cyprus, July 2018.
5. F. Esqueda, O. Lähdeoja & V. Välimäki, “Algorithms for guitar-driven synthesis: Application to an augmented guitar,” in *Proc. 15th Sound and Music Computing Conference* (SMC-18), pp. 444–451, Limassol, Cyprus, July 2018.
6. A. Mäkivirta, J. Liski & V. Välimäki, “Effect of delay equalization on loudspeaker responses,” in *Proc. 144th Audio Eng. Soc. Int. Conv.*, Milan, Italy, preprint no. 9998, May 2018.
7. J. Liski, A. Mäkivirta & V. Välimäki, “Audibility of loudspeaker group-delay characteristics,” in *Proc. 144th Audio Eng. Soc. Int. Conv.*, Milan, Italy, preprint no. 10008, May 2018.
8. E. Paschou, F. Esqueda, V. Välimäki & J. Mourjopoulos, “Modeling and measuring a Moog voltage-controlled filter,” in *Proc. Ninth Annual Conference of the Asia-Pacific Signal and Information Processing Association APSIPA-17*, pp. 1641–1647, Kuala Lumpur, Malaysia, Dec. 2017.
9. B. Alary, A. Politis & V. Välimäki, “Velvet-noise decorrelator,” in *Proc. 20th Int. Conf. Digital Audio Effects* (DAFx-17), pp. 405–411, Edinburgh, UK, Sept. 2017.
10. F. Esqueda, H. Pöntynen, V. Välimäki & J. D. Parker, “Virtual analog Buchla 259 wavefolder,” in *Proc. 20th Int. Conf. Digital Audio Effects* (DAFx-17), pp. 192–199, Edinburgh, UK, Sept. 2017.
11. J. Liski & V. Välimäki, “The quest for the best graphic equalizer,” in *Proc. 20th Int. Conf. Digital Audio Effects* (DAFx-17), pp. 95–102, Edinburgh, UK, Sept. 2017.
12. J. Liski, S. Vesa, R. Väänänen & V. Välimäki, “Real-time adaptive equalization for headphone listening,” in *Proc. 25th European Signal Processing Conf. (EUSIPCO-17)*, pp. 608–612, Kos, Greece, Aug. 2017.
13. F. Esqueda, S. Bilbao & V. Välimäki, “Eliminating aliasing caused by discontinuities using integrals of the sinc function,” in *Proc. Int. Symp. Musical and Room Acoustics (ISMRA-2016)*, La Plata, Argentina, Sept. 2016.
14. F. Esqueda, S. Bilbao & V. Välimäki, “Antialiased soft clipping using a polynomial approximation of the integrated bandlimited ramp function,” in *Proc. 22nd Int. Congr. Acoust. (ICA-2016)*, Buenos Aires, Argentina, Sept. 2016.
15. R. Kiiski, F. Esqueda & V. Välimäki, “Time-variant gray-box modeling of a phaser pedal,” in *Proc. 19th Int. Conf. Digital Audio Effects* (DAFx-16), pp. 31–38, Brno, Czech Republic, Sept. 2016.
16. F. Esqueda, V. Välimäki & S. Bilbao, “Rounding corners with BLAMP,” in *Proc. 19th Int. Conf. Digital Audio Effects* (DAFx-16), pp. 121–128, Brno, Czech Republic, Sept. 2016.
17. J. Liski, R. Väänänen, S. Vesa & V. Välimäki, “Adaptive equalization of acoustic transparency in an augmented-reality headset,” in *Proc. AES Int. Conf. Headphone Technology*, Aalborg, Denmark, Aug. 2016.
18. F. Esqueda, V. Välimäki & S. Bilbao, “Antialiased soft clipping using an integrated bandlimited ramp,” in *Proc. European Signal Processing Conference (EUSIPCO-16)*, Budapest, Hungary, Aug. 2016.

19. J. A. Belloch & V. Välimäki, “Efficient target-response interpolation for a graphic equalizer,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-16)*, pp. 564–568, Shanghai, China, Mar. 2016.
20. V. Välimäki, J. D. Parker, L. Savioja, J. O. Smith & J. S. Abel, “More than fifty years of artificial reverberation,” in *Proc. AES 60th Int. Conf. Dereverberation and Reverberation of Audio, Music, and Speech*, 12 p., Leuven, Belgium, Feb. 2016.
21. R. Mignot, V. Mäntyniemi & V. Välimäki, “Granular analysis/synthesis of percussive drilling sounds,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-15)*, pp. 19–26, Trondheim, Norway, Nov, 2015.
22. F. Esqueda, V. Välimäki & J. Parker, “Barberpole phasing and flanging illusions,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-15)*, pp. 87–94, Trondheim, Norway, Nov, 2015.
23. F. Vidal Wagner & V. Välimäki, “Automatic calibration and equalization of a line array system,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-15)*, pp. 123–130, Trondheim, Norway, Nov, 2015.
24. V. Norilo, M. Verstraelen & V. Välimäki, “Implementing a low-latency parallel graphic equalizer with heterogeneous computing,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-15)*, pp. 351–357, Trondheim, Norway, Nov, 2015.
25. F. Esqueda, V. Välimäki & S. Bilbao, “Aliasing reduction in soft-clipping algorithms,” in *Proc. European Signal Processing Conf. (EUSIPCO 2015)*, pp. 2059–2063, Nice, France, Aug. 2015.
26. I. A. Kubilay, J. T. Vesikkala, M. Pàmies-Vilà, T. Kuusi & V. Välimäki, “High-speed line-scan camera measurements of piano string multiphonics,” in *Proc. 22nd Int. Congr. Sound and Vibration*, Florence, Italy, July 2015.
27. R. Mignot & V. Välimäki, “Perceptual linear filters: Low-order ARMA approximation for sound synthesis,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-14)*, pp. 77–83, Erlangen, Germany, Sept. 2014.
28. J. Timoney, V. Lazzarini, J. Kleimola & V. Välimäki, “Examining the oscillator waveform animation effect,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-14)*, pp. 101–107, Erlangen, Germany, Sept. 2014.
29. O. Lähdeoja, A. Haapaniemi & V. Välimäki, “Sonic scenography – Equalized structure-borne sound for aurally active set design,” in *Proc. 40th International Computer Music Conference*, Athens, Greece, Sept. 2014.
30. J. A. Belloch, J. Parker, L. Savioja, A. Gonzalez & V. Välimäki, “Dynamic range reduction of audio signals using multiple allpass filters on a GPU accelerator,” in *Proc. European Signal Processing Conf. (EUSIPCO 2014)*, pp. 1725–1730, Lisbon, Portugal, Sept. 2014.
31. J. Rämö & V. Välimäki, “An allpass hear-through headset,” in *Proc. European Signal Processing Conf. (EUSIPCO 2014)*, Lisbon, Portugal, Sept. 2014.
32. J. A. Belloch, B. Bank, L. Savioja, A. Gonzalez & V. Välimäki, “Multi-channel IIR filtering of audio signals using a GPU,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-14)*, pp. 6692–6696, Florence, Italy, May 2014.
33. R. Mignot & V. Välimäki, “True discrete cepstrum: An accurate and smooth spectral envelope estimation for music processing,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-14)*, pp. 7465–7469, Florence, Italy, May 2014.
34. L. Gabrielli, M. Giobbi, S. Squartini & V. Välimäki, “A nonlinear second-order digital oscillator for virtual acoustic feedback,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-14)*, pp. 7485–7489, Florence, Italy, May 2014.
35. R. Mignot & V. Välimäki, “Extended subtractive synthesis of harmonic musical tones,” in *Proc. 136th Audio Eng. Soc. Convention (AES136)*, Convention paper no. 9038, Berlin, Germany, April 2014.

36. R. Mignot & V. Välimäki, “Perceptual cepstral filters for speech and music processing,” in *Proc. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA-13)*, New Paltz, NY, USA, Oct. 20–23, 2013.
37. B. Holm-Rasmussen, H.-M. Lehtonen & V. Välimäki, “A new reverberator based on variable sparsity convolution,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-13)*, pp. 344–350, Maynooth, Ireland, Sept. 2013.
38. S. Oksanen, J. Parker & V. Välimäki, “Physically informed synthesis of jackhammer tool impact sounds,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-13)*, pp. 168–171, Maynooth, Ireland, Sept. 2013.
39. J. Rämö, V. Välimäki & M. Tikander, “Live sound equalization and attenuation with a headset,” in *Proc. AES 51st Int. Conf. Loudspeakers and Headphones*, 8 pages, Helsinki, Finland, Aug. 2013.
40. H. Tuominen, J. Rämö & V. Välimäki, “Acoustic retroreflectors for music performance monitoring,” in *Proc. Sound and Music Computing Conf. (SMC-13)*, pp. 443–447, Stockholm, Sweden, July/Aug. 2013.
41. R. Mignot, H.-M. Lehtonen & V. Välimäki, “Warped low-order modeling of musical tones,” in *Proc. Sound and Music Computing Conf. (SMAC-13)*, pp. 622–627, Stockholm, Sweden, July/Aug. 2013.
42. H. Tahvanainen, J. Pölkki, H. Penttinen & V. Välimäki, “Finite element mode of a kantele with improved sound radiation,” in *Proc. Stockholm Music Acoustics Conf. (SMAC-13)*, pp. 193–198, Stockholm, Sweden, July/Aug. 2013.
43. D. Kartofelev, A. Stulov, H.-M. Lehtonen & V. Välimäki, “Modeling vibrating string terminated against a bridge with arbitrary geometry,” in *Proc. Stockholm Music Acoustics Conf. (SMAC-13)*, pp. 626–632, Stockholm, Sweden, July/Aug. 2013.
44. L. Gabrielli, L. Remaggi, S. Squartini & V. Välimäki, “A finite difference method for the excitation of a digital waveguide string model,” Presented at the *Audio Eng. Soc. 134th Convention*, paper no. 8816, Rome, Italy, May 2013.
45. A. Franck & V. Välimäki, “An ideal integrator for higher-order integrated wavetable synthesis,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-13)*, pp. 41–45, Vancouver, Canada, May 2013.
46. S. Oksanen, J. Parker, A. Politis & V. Välimäki, “A directional diffuse reverberation model for excavated tunnels in rock,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-13)*, pp. 644–648, Vancouver, Canada, May 2013.
47. J. Rämö, V. Välimäki & M. Tikander, “Perceptual headphone equalization for mitigation of ambient noise,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-13)*, pp. 724–728, Vancouver, Canada, May 2013.
48. S. D’Angelo & V. Välimäki, “An improved virtual analog model of the Moog ladder filter,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-13)*, pp. 729–733, Vancouver, Canada, May 2013.
49. L. Remaggi, L. Gabrielli, R. C. D. de Paiva, V. Välimäki & S. Squartini, “A pickup model for the Clavinet,” in *Proc. 15th Int. Conf. Digital Audio Effects (DAFx-12)*, pp. 79–83, York, UK, September 17–21, 2012.
50. J. Timoney, V. Lazzarini, M. Hodgkinson, J. Kleimola, J. Pekonen & V. Välimäki, “Virtual analog oscillator hard synchronisation: Fourier series and an efficient implementation,” in *Proc. 15th Int. Conf. Digital Audio Effects (DAFx-12)*, pp. 217–224, York, UK, September 17–21, 2012.
51. A. Franck & V. Välimäki, “Higher-order integrated wavetable synthesis,” in *Proc. 15th Int. Conf. Digital Audio Effects (DAFx-12)*, pp. 245–252, York, UK, September 17–21, 2012.

52. R. C. D. Paiva & V. Välimäki, “The Helmholtz resonator tree,” in *Proc. 15th Int. Conf. Digital Audio Effects (DAFx-12)*, pp. 413–420, York, UK, September 17–21, 2012.
53. J. Rämö & V. Välimäki, “Signal processing framework for virtual headphone listening tests in a noisy environment,” in *Proc. AES 132nd Convention*, Budapest, Hungary, April 26–29, 2012.
54. S. D’Angelo & V. Välimäki, “Wave-digital polarity and current inverters and their application to virtual analog audio processing,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP-12)*, pp. 469–472, Kyoto, Japan, Mar. 2012.
55. R. C. D. Paiva, J. Pakarinen & V. Välimäki, “Reduced-complexity modeling of high-order nonlinear audio systems using swept-sine and principal component analysis,” in *Proc. AES 45th International Conference on Time-Frequency Processing of Audio*, pp. 259–268, Espoo, Finland, Mar. 2012.
56. J. Rämö, V. Välimäki, M. Alanko & M. Tikander, “Perceptual frequency response simulator for music in noisy environments,” in *Proc. AES 45th International Conference on Time-Frequency Processing of Audio*, pp. 269–278, Espoo, Finland, Mar. 2012.
57. J. Pekonen, T. Pihlajamäki & V. Välimäki, “Computationally efficient Hammond organ synthesis,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-11)*, pp. 19–23, Paris, France, Sept. 19–23, 2011.
58. S. Oksanen & V. Välimäki, “Modeling of the carbon microphone nonlinearity for a vintage telephone sound,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-11)*, pp. 27–30, Paris, France, Sept. 19–23, 2011.
59. H. Gamper, J. Parker & V. Välimäki, “Automated calibration of a parametric spring reverb model,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-11)*, pp. 37–44, Paris, France, Sept. 19–23, 2011.
60. J. Kleimola, V. Lazzarini, J. Timoney & V. Välimäki, “Vector phaseshaping synthesis,” in *Proc. Int. Conf. Digital Audio Effects (DAFx-11)*, pp. 233–240, Paris, France, Sept. 19–23, 2011.
61. V. Lazzarini, J. Kleimola, J. Timoney & V. Välimäki, “Aspects of second-order feedback AM synthesis,” in *Proc. Int. Computer Music Conf.*, pp. 92–95, Huddersfield, UK, July 31–Aug. 5, 2011.
62. L. Gabrielli, V. Välimäki & S. Bilbao, “Real-time emulation of the Clavinet,” in *Proc. Int. Computer Music Conf.*, pp. 249–252, Huddersfield, UK, July 31–Aug. 5, 2011.
63. S. Oksanen & V. Välimäki, “Digital modeling of the vintage telephone sound,” in *Proc. Int. Computer Music Conf.*, pp. 636–639, Huddersfield, UK, July 31–Aug. 5, 2011.
64. J. Pekonen & V. Välimäki, “The brief history of virtual analog synthesis,” in *Proc. Forum Acusticum*, pp. 461–466, Aalborg, Denmark, June 27 – July 1, 2011.
65. J. Pekonen, J. Nam, J. O. Smith, J. S. Abel & V. Välimäki, “On minimizing the look-up table size in quasibandlimited classical waveform oscillators,” in *Proc. 13th Int. Conf. Digital Audio Effects (DAFx-10)*, pp. 57–64, Graz, Austria, Sept. 6–10, 2010.
66. M. Laurson, V. Välimäki & H. Penttinen, “Simulating idiomatic playing styles in a classical guitar synthesizer: Rasgueado as a case study,” in *Proc. 13th Int. Conf. Digital Audio Effects (DAFx-10)*, pp. 326–329, Graz, Austria, Sept. 6–10, 2010.
67. J. Kleimola, V. Lazzarini, J. Timoney & V. Välimäki, “Phaseshaping oscillator algorithms for musical sound synthesis,” in *Proc. 7th Sound and Music Computing Conference (SMC-2010)*, Barcelona, Spain, July 21–24, 2010.
68. J. Pekonen, V. Välimäki, J. S. Abel & J. O. Smith, “Spectral delay filters with feedback and time-varying coefficients,” in *Proc. 12th Int. Conf. Digital Audio Effects (DAFx-09)*, Como, Italy, Sept. 1–4, 2009.
69. J. Kleimola, J. Pekonen, H. Penttinen, V. Välimäki & J. S. Abel, “Sound synthesis using an allpass filter chain with audio-rate coefficient modulation,” in *Proc. 12th Int. Conf. Digital Audio Effects (DAFx-09)*, Como, Italy, Sept. 1–4, 2009.

70. J. Nam, V. Välimäki, J. S. Abel & J. O. Smith, “Alias-free virtual analog oscillators using a feedback delay loop,” in *Proc. 12th Int. Conf. Digital Audio Effects (DAFx-09)*, Como, Italy, Sept. 1–4, 2009.
71. V. Lazzarini, J. Timoney, J. Pekonen & V. Välimäki, “Adaptive phase distortion synthesis,” in *Proc. 12th Int. Conf. Digital Audio Effects (DAFx-09)*, Como, Italy, Sept. 1–4, 2009.
72. V. Lazzarini, J. Timoney, J. Kleimola & V. Välimäki, “Five variations on a feedback theme,” in *Proc. 12th Int. Conf. Digital Audio Effects (DAFx-09)*, Como, Italy, Sept. 1–4, 2009.
73. J. Pekonen, V. Välimäki, J. Nam, J. S. Abel & J. O. Smith, “Variable fractional delay filters in bandlimited oscillator algorithms for music synthesis,” in *Proceedings of Proceedings of the 2010 Int. Conf. Green Circuits and Systems (ICGCS-2010)*, pp. 148–153, Shanghai, China, June 21–23, 2010. Invited paper.
74. J. Timoney, V. Lazzarini, J. Pekonen & V. Välimäki, “Spectrally rich phase distortion sound synthesis using an allpass filter,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP’09)*, Taipei, Taiwan, pp. 293–296, April 19–24, 2009.
75. A. Camurri, F. Bevilacqua, R. Bresin, E. Maestre, H. Penttinen, J. Seppänen, V. Välimäki, G. Volpe & O. Warusfel, “Embodied music listening and making in context-aware mobile applications: the EU-ICT SAME Project,” in *Proc. 8th International Gesture Workshop (GW 2009)*, Bielefeld, Germany, Feb. 25–27, 2009.
76. J. Pakarinen, V. Välimäki & T. Puputti, “Slide guitar synthesizers with gestural control,” in *Proc. 2008 Int. Conf. New Interfaces for Musical Expression (NIME08)*, pp. 49–52, Genova, Italy, June 4–8, 2008.
77. A. Haghparast & V. Välimäki, “A computationally efficient coefficient update technique for Lagrange fractional delay filters,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP’08)*, pp. 3737–3740, Las Vegas, Nevada, USA, March 30 - April 4, 2008.
78. J. Pekonen & V. Välimäki, “Filter-based alias reduction in classical waveform synthesis,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP’08)*, pp. 133–136, Las Vegas, Nevada, USA, March 30–April 4, 2008.
79. H.-M. Lehtonen, H. Penttinen, J. Rauhala & V. Välimäki, “Analysis of the sustain-pedal effect in the grand piano,” in *Proc. 19th Int. Congress Acoustics (ICA2007)*, Madrid, Spain, Sept. 2–7, 2007. CD-ROM proceedings. Invited paper.
80. H. Penttinen, J. Pakarinen, V. Välimäki, M. Laurson, M. Kuuskankare, H. Li & M. Leman, “Aspects on physical modeling of a Chinese string instrument – the guqin,” in *Proc. 19th Int. Congress Acoustics (ICA2007)*, Madrid, Spain, Sept. 2-7, 2007. CD-ROM proceedings.
81. M. Karjalainen, T. Paatero, J. Pakarinen & V. Välimäki, “Special digital filters for audio reproduction,” in *Proc. AES 32nd Int. Conf. DSP for Loudspeakers (AES32)*, Hillerød, Denmark, Sept. 21–23, 2007. Invited paper.
82. A. Haghparast, H. Penttinen & V. Välimäki, “Real-time pitch-shifting of musical signals by a time-varying factor using normalized filtered correlation time-scale modification (NFC-TSM),” in *Proc. 10th Int. Conf. Digital Audio Effects*, pp. 7–13, Bordeaux, France, Sept. 10–15, 2007.
83. A. Kelloniemi, P. Huang, V. Välimäki & L. Savioja, “Hyper-dimensional digital waveguide mesh for reverberation modeling,” in *Proc. 10th Int. Conf. Digital Audio Effects*, pp. 109–116, Bordeaux, France, Sept. 10–15, 2007.
84. V. Välimäki, H.-M. Lehtonen & T. I. Laakso, “Musical signal analysis using fractional-delay inverse comb filters,” in *Proc. 10th Int. Conf. Digital Audio Effects*, pp. 261–268, Bordeaux, France, Sept. 10–15, 2007.
85. J. Rauhala & V. Välimäki, “F0 estimation of inharmonic piano tones using partial frequencies deviation method,” in *Proc. Int. Computer Music Conf.*, pp. 453–456, Copenhagen, Denmark, Aug. 27–31, 2007.

86. H.-M. Lehtonen, J. Rauhala & V. Välimäki, V. Norilo & M. Laurson, “Recent Advances in Physics-Based Sound Synthesis of the Piano,” in *Proc. Nordic Music Technology Conf.*, Trondheim, Norway, Oct. 12–14, 2006.
87. H. Penttinen, J. Pakarinen, V. Välimäki, M. Laurson, H. Li & M. Leman, “Physical modeling of the guqin, a Chinese string instrument,” in *Proc. Nordic Music Technology Conf.*, Trondheim, Norway, Oct. 12–14, 2006.
88. J. Rauhala & V. Välimäki, “Dispersion Modeling in Waveguide Piano Synthesis Using Tunable Allpass Filters,” in *Proc. 9th Int. Conf. Digital Audio Effects*, pp. 71–76, Montreal, Canada, Sept. 18–20, 2006.
89. J. Rauhala & V. Välimäki, “Parametric excitation model for commuted waveguide piano synthesis,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing*, vol. 5, pp. 157–160, Toulouse, France, May 15–19, 2006.
90. A. Kelloniemi, V. Välimäki & L. Savioja, “Simulation of Room Acoustics Using 2-D Digital Waveguide Meshes,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing*, vol. 5, pp. 313–316, Toulouse, France, May 15–19, 2006.
91. H.-M. Lehtonen, J. Rauhala & V. Välimäki, “Sparse multi-stage loss filter design for waveguide piano synthesis,” in *Proc. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA’05)*, pp. 331–334, New Paltz, NY, USA, Oct. 16–19, 2005.
92. A. Kelloniemi, P. Huang, V. Välimäki & L. Savioja, “Artificial reverberation using a hyper-dimensional FDTD mesh,” in *Proc. 13th European Signal Processing Conf. (EUSIPCO 2005)*, Antalya, Turkey, Sept. 4–8, 2005. CD-ROM Proceedings.
93. A. Huovilainen & V. Välimäki, “New approaches to digital subtractive synthesis,” in *Proc. Int. Computer Music Conf. (ICMC’05)*, pp. 399–402, Barcelona, Spain, Sept. 2005.
94. J. Rauhala, H.-M. Lehtonen & V. Välimäki, “Multi-ripple loss filter for waveguide piano synthesis,” in *Proc. Int. Computer Music Conf. (ICMC’05)*, pp. 729–732, Barcelona, Spain, Sept. 2005.
95. J. Pakarinen, M. Karjalainen, V. Välimäki & S. Bilbao, “Energy behavior in time-varying fractional delay filters for physical modeling of musical instruments,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP’05)*, vol. 3, pp. 1–4, Philadelphia, PA, USA, Mar. 19–23, 2005.
96. H. Penttinen, J. Siiskonen & V. Välimäki, “Acoustic guitar plucking point estimation in real time,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP’05)*, vol. 3, pp. 209–212, Philadelphia, PA, USA, Mar. 19–23, 2005.
97. V. Välimäki, M. Ilmoniemi & M. Huottilainen, “Decomposition and modification of musical instrument sounds using a fractional delay allpass filter,” in *Proc. 6th Nordic Signal Processing Symposium (NORSIG 2004)*, pp. 208–211, Espoo, Finland, June 9–11, 2004.
98. T. Lukkari & V. Välimäki, “Modal synthesis of wind chime sounds with stochastic event triggering,” in *Proc. 6th Nordic Signal Processing Symposium (NORSIG 2004)*, pp. 212–215, Espoo, Finland, June 9–11, 2004.
99. M. Ilmoniemi, V. Välimäki & M. Huottilainen, “Subjective evaluation of musical instrument timbre modifications,” in *Proc. Baltic-Nordic Acoustics Meeting (BNAM2004)*, Mariehamn, Åland, June 8–10, 2004. CD-ROM Proceedings.
100. V. Välimäki, H. Penttinen, M. Laurson, C. Erkut & J. Knif, “Model-based sound synthesis of the harpsichord,” in *Proc. Baltic-Nordic Acoustics Meeting (BNAM2004)*, Mariehamn, Åland, June 8–10, 2004. CD-ROM Proceedings.
101. A. Kelloniemi, D. T. Murphy, L. Savioja & V. Välimäki, “Boundary conditions in a multidimensional digital waveguide mesh,” in *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP’04)*, Montreal, Quebec, Canada, May 17–21, 2004.

102. L. Savioja, A. Kelloniemi, V. Välimäki & D. T. Murphy, “Current state of research on boundary conditions in the digital waveguide mesh,” in *Proc. 18th Int. Congress on Acoustics (ICA)*, pp. 477–478, Kyoto, Japan, Apr. 4–9, 2004. Invited paper.
103. M. Karjalainen, J. Pakarinen, C. Erkut, P. A. A. Esquef & V. Välimäki, “Recent advances in physical modeling with K- and W-techniques,” in *Proc. 7th Int. Conf. Digital Audio Effects (DAFx’04)*, pp. 107–112, Naples, Italy, Oct. 5–8, 2004.
104. K. Roth, I. Kauppinen, P. A. A. Esquef & V. Välimäki, “Frequency warped Burg’s method for AR modeling,” in *Proc. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA’03)*, pp. 5–8, New Paltz, New York, USA, Oct. 19–22, 2003.
105. L. Trautmann & V. Välimäki, “A multirate approach to physical modeling synthesis using the functional transformation method,” in *Proc. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA’03)*, pp. 221–224, New Paltz, New York, USA, Oct. 19–22, 2003.
106. P. A. A. Esquef, V. Välimäki, K. Roth & I. Kauppinen, “Interpolation of long gaps in audio signals using the warped Burg’s method,” in *Proc. 6th Int. Conf. Digital Audio Effects (DAFx-03)*, pp. 18–23, London, UK, Sept. 8–11, 2003.
107. J. Pölkki, C. Erkut, H. Penttinen, M. Karjalainen & V. Välimäki, “New design for a concert kantele,” in *Proc. Stockholm Music Acoustics Conf. (SMAC’03)*, pp. 133–136, Stockholm, Sweden, Aug. 6–9, 2003.
108. J. Pakarinen, M. Karjalainen & V. Välimäki, “Modeling and real-time synthesis of the kantele using distributed tension modulation,” in *Proc. Stockholm Music Acoustics Conf. (SMAC’03)*, pp. 409–412, Stockholm, Sweden, Aug. 6–9, 2003.
109. V. Välimäki, “Physics-based modeling of musical instruments,” in *Proc. Stockholm Music Acoustics Conf. (SMAC’03)*, vol. 1, pp. 361–364, Stockholm, Sweden, Aug. 6–9, 2003. Invited paper.
110. M. Karjalainen and P. A. A. Esquef & V. Välimäki, “Making of a computer carillon,” in *Proc. Stockholm Music Acoustics Conf. (SMAC’03)*, pp. 339–342, Stockholm, Sweden, Aug. 6–9, 2003.
111. M. Karjalainen, V. Välimäki & P. Esquef, “Efficient modeling and synthesis of bell-like sounds,” in *Proc. Int. Conf. Digital Audio Effects (DAFx’02)*, pp. 181–186, Hamburg, Germany, Sept. 26–28, 2002.
112. L. Savioja & V. Välimäki, “Interpolated 3-D digital waveguide mesh for room acoustic simulations,” presented at *Forum Acusticum 2002*, Sevilla, Spain, Sept. 16–20, 2002. Invited paper.
113. J. Riionheimo & V. Välimäki, “Parameter estimation of a plucked string synthesis model with a genetic algorithm,” in *Proc. Int. Computer Music Conf. (ICMC’02)*, pp. 283–286, Gothenburg, Sweden, Sept. 16–21, 2002.
114. L. Savioja, T. Lokki & V. Välimäki, “The interpolated 3-D digital waveguide mesh method for room acoustic simulation and auralization,” in *Proc. Joint Baltic-Nordic Acoustical Meeting 2002*, Lyngby, Denmark, Aug. 26–28, 2002.
115. P. Esquef, M. Karjalainen & V. Välimäki, “Detection of clicks in audio signals using warped linear prediction,” in *Proc. 14th IEEE Int. Conf. Digital Signal Processing (DSP2002)*, vol. 2, pp. 1085–1088, Santorini, Greece, July 1–3, 2002.
116. M. Laurson, V. Välimäki & C. Erkut, “Production of virtual acoustic guitar music,” in *Proc. AES 22nd Int. Conf. Virtual, Synthetic, and Entertainment Audio*, pp. 249–255, Espoo, Finland, June 15–17, 2002.
117. L. Trautmann, B. Bank, V. Välimäki & R. Rabenstein, “Combining digital waveguide and functional transformation methods for physical modeling of musical instruments,” in *Proc. AES 22nd Int. Conf. Virtual, Synthetic, and Entertainment Audio*, pp. 307–316, Espoo, Finland, June 15–17, 2002.

118. F. Fontana, L. Savioja & V. Välimäki, “A modified rectangular waveguide mesh structure with interpolated input and output points,” in *Proc. Int. Computer Music Conf. (ICMC'01)*, pp. 87–90, Havana, Cuba, Sept. 18–22, 2001.
119. C. Erkut, M. Laurson, M. Kuuskankare & V. Välimäki, “Model-based synthesis of the ud and the Renaissance lute,” in *Proc. Int. Computer Music Conf. (ICMC'01)*, pp. 119–122, Havana, Cuba, Sept. 18–22, 2001.
120. V. Välimäki, C. Erkut & M. Laurson, “Sound synthesis of plucked string instruments using a computed waveguide model,” in *Proc. 17th Int. Congr. Acoustics (ICA17)*, CD-ROM vol. 4 (no page numbers), Rome, Italy, Sept. 2–7, 2001. Invited paper.
121. V. Välimäki, J. Kataja & M. Antila, “Unidirectional solutions for active noise control in ducts,” in *Proc. 30th Int. Congr. Noise Control Eng. (InterNoise 2001)*, pp. 635–640, The Hague, The Netherlands, Aug. 27–30, 2001. Invited paper.
122. L. Savioja & V. Välimäki, “Interpolated 3-D digital waveguide mesh with frequency warping,” in *Proc. 2001 IEEE Int. Conf. Acoust. Speech. and Signal Process. (ICASSP'01)*, vol. 5, pp. 3345–3348, Salt Lake City, Utah, USA, May 7–11, 2001.
123. M. Makundi, V. Välimäki & T. I. Laakso, “Closed-form design of tunable fractional-delay allpass filter structures,” in *Proc. 2001 IEEE Int. Symp. Circ. Syst. (ISCAS'01)*, vol. 4, pp. 434–437, Sydney, Australia, May 6–9, 2001.
124. M. Laurson, C. Erkut & V. Välimäki, “Methods for modeling realistic playing in plucked-string synthesis: analysis, control and synthesis,” in *Proc. COST-G6 Conf. Digital Audio Effects (DAFx'00)*, pp. 183–188, Verona, Italy, Dec. 7–9, 2000.
125. V. Välimäki & L. Savioja, “Interpolated and warped 2-D digital waveguide mesh algorithms,” in *Proc. COST-G6 Conf. Digital Audio Effects (DAFx'00)*, pp. 201–206, Verona, Italy, Dec. 7–9, 2000. Invited paper.
126. H. Järveläinen & V. Välimäki, “Audibility of initial pitch glides in string instrument sounds,” in *Proc. Int. Computer Music Conf. (ICMC'01)*, pp. 282–285, Havana, Cuba, Sept. 18–22, 2001.
127. V. Välimäki, “Simple design of fractional delay allpass filters,” in *Proc. X European Signal Processing Conf. (EUSIPCO'00)*, vol. 4, pp. 1881–1884, Tampere, Finland, Sept. 5–8, 2000.
128. B. Bank, V. Välimäki, L. Sujbert & M. Karjalainen, “Efficient physics-based sound synthesis of the piano using DSP methods,” in *Proc. X European Signal Processing Conf. (EUSIPCO'00)*, vol. 4, pp. 2225–2228, Tampere, Finland, Sept. 5–8, 2000.
129. J.-M. Holm & V. Välimäki, “Modeling and modification of violin body modes for sound synthesis,” in *Proc. X European Signal Processing Conf. (EUSIPCO'00)*, vol. 4, 2229–2232, Tampere, Finland, Sept. 5–8, 2000.
130. H. Penttinen, V. Välimäki & M. Karjalainen, “A digital filtering approach to obtain a more acoustic timbre for an electric guitar,” in *Proc. X European Signal Processing Conf. (EUSIPCO'00)*, vol. 4, 2233–2236, Tampere, Finland, Sept. 5–8, 2000.
131. V. Välimäki, M. Laurson, C. Erkut & T. Tolonen, “Model-based synthesis of the clavichord,” in *Proc. Int. Computer Music Conf. (ICMC'00)*, pp. 50–53, Berlin, Germany, Aug. 27–Sept. 1, 2000.
132. T. Takala, J. Hiipakka, M. Laurson & V. Välimäki, “An expressive synthesis model for bowed string instruments,” in *Proc. Int. Computer Music Conf. (ICMC'00)*, pp. 70–73, Berlin, Germany, Aug. 27–Sept. 1, 2000.
133. H. Järveläinen, T. Verma & V. Välimäki, “The effect of inharmonicity on pitch in string instrument sounds,” in *Proc. Int. Computer Music Conf. (ICMC'00)*, pp. 237–240, Berlin, Germany, Aug. 27–Sept. 1, 2000.

134. C. Erkut & V. Välimäki, “Model-based sound synthesis of tanbur, a Turkish long-necked lute,” in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Process.*, vol. 2, pp. 769–772, Istanbul, Turkey, June 5–9, 2000.
135. M. Karjalainen, H. Penttinen & V. Välimäki, “Acoustic sound from the electric guitar using DSP techniques,” in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Process. (ICASSP’00)*, vol. 2, pp. 773–776, Istanbul, Turkey, June 5–9, 2000.
136. V. Välimäki & T. I. Laakso, “Principles of fractional delay filters,” in *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Process.*, vol. 6, pp. 3870–3873, Istanbul, Turkey, June 5–9, 2000. Invited paper.
137. M. Karjalainen, H. Penttinen & V. Välimäki, “More acoustic sounding timbre from guitar pickups,” in *Proc. 2nd COST-G6 Workshop on Digital Audio Effects (DAXF’99)*, pp. 41–44, Trondheim, Norway, Dec. 9–11, 1999.
138. M. Laurson, J. Hiipakka, C. Erkut, M. Karjalainen, V. Välimäki & M. Kuuskankare, “From expressive notation to model-based sound synthesis: a case study of the acoustic guitar,” in *Proc. Int. Computer Music Conf. (ICMC’99)*, pp. 1–4, Beijing, China, Oct. 22–28, 1999.
139. T. Tolonen, C. Erkut, V. Välimäki & M. Karjalainen, “Simulation of plucked strings exhibiting tension modulation driving force,” in *Proc. Int. Computer Music Conf. (ICMC’99)*, pp. 5–8, Beijing, China, Oct. 22–28, 1999.
140. H. Järveläinen, V. Välimäki & M. Karjalainen, “Audibility of inharmonicity in string instrument sounds, and implications to digital sound synthesis,” in *Proc. Int. Computer Music Conf. (ICMC’99)*, pp. 359–362, Beijing, China, Oct. 22–28, 1999.
141. V. Välimäki, M. Karjalainen, T. Tolonen & C. Erkut, “Nonlinear modeling and synthesis of the kantele—a traditional Finnish string instrument,” in *Proc. Int. Computer Music Conf. (ICMC’99)*, pp. 220–223, Beijing, China, Oct. 22–28, 1999.
142. V. Pulkki, M. Karjalainen & V. Välimäki, “Localization, coloration, and enhancement of amplitude-panned virtual sources,” in *Proc. AES 16th Int. Conf. Spatial Sound Reproduction*, pp. 257–278, Rovaniemi, Finland, Apr. 10–12, 1999.
143. L. Savioja & V. Välimäki, “Reduction of the dispersion error in the interpolated digital waveguide mesh using frequency warping,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’99)*, vol. 2, pp. 973–976, Phoenix, Arizona, Mar. 15–19, 1999.
144. V. Välimäki, T. Tolonen & M. Karjalainen, “Plucked-string synthesis algorithms with tension modulation nonlinearity,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’99)*, vol. 2, pp. 977–980, Phoenix, Arizona, Mar. 15–19, 1999.
145. E. Piirilä, T. Lokki & V. Välimäki, “Digital signal processing techniques for non-exponentially decaying reverberation,” in *Proc. 1998 Digital Audio Effects Workshop (DAFX’98)*, pp. 21–24, Barcelona, Spain, Nov. 19–21, 1998.
146. V. Välimäki, T. Tolonen & M. Karjalainen, “Signal-dependent nonlinearities for physical models using time-varying fractional delay filters,” in *Proc. 1998 Int. Computer Music Conf. (ICMC’98)*, pp. 264–267, Ann Arbor, Michigan, USA, Oct. 1–6, 1998.
147. V. Välimäki & S. Uosukainen, “Adaptive design of a unidirectional source in a duct,” in *Proc. ISMA23—Int. Conf. Noise and Vibration Engineering*, vol. 3, pp. 1253–1260, Leuven, Belgium, Sept. 16–18, 1998.
148. T. Tolonen, V. Välimäki & M. Karjalainen, “A new sound synthesis structure for modeling the coupling of guitar strings,” in *Proc. IEEE Nordic Signal Processing Symp. (NORSIG’98)*, pp. 205–208, Vigsø, Denmark, June 8–11, 1998.

149. T. I. Laakso & V. Välimäki, “Energy-based effective length of the impulse response of a recursive filter,” in *Proc. 1998 IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’98)*, vol. 3, pp. 1253–1256, Seattle, Washington, May 12–16, 1998.
150. V. Välimäki & T. I. Laakso, “Suppression of transients in time-varying recursive filters for audio signals,” in *Proc. 1998 IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’98)*, vol. 6, pp. 3569–3572, Seattle, Washington, May 12–16, 1998.
151. M. van Walstijn & V. Välimäki, “Digital waveguide modeling of flared acoustical tubes,” in *Proc. 1997 Int. Computer Music Conf. (ICMC’97)*, pp. 196–199, Thessaloniki, Greece, Sept. 25–30, 1997.
152. R. Väänänen, V. Välimäki, J. Huopaniemi & M. Karjalainen, “Efficient and parametric reverberator for room acoustics modeling,” in *Proc. 1997 Int. Computer Music Conf. (ICMC’97)*, pp. 200–203, Thessaloniki, Greece, Sept. 25–30, 1997.
153. V. Välimäki & T. Tolonen, “Multirate extensions for model-based synthesis of plucked string instruments,” in *Proc. 1997 Int. Computer Music Conf. (ICMC’97)*, pp. 244–247, Thessaloniki, Greece, Sept. 25–30, 1997.
154. L. Savioja & V. Välimäki, “Improved discrete-time modeling of multi-dimensional wave propagation using the interpolated digital waveguide mesh,” in *Proc. 1997 IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’97)*, vol. 1, pp. 459–462, Munich, Germany, Apr. 21–24, 1997.
155. T. Harju, S. J. Ovaska & V. Välimäki, “Delayless signal smoothing using a median and predictive filter hybrid,” in *Proc. 1996 Int. Conf. Signal Processing (ICSP’96)*, pp. 87–90, Beijing, China, Oct. 14–18, 1996.
156. A. Tarczynski & V. Välimäki, “Modifying FIR and IIR filters for processing signals with lost samples,” in *Proc. 1996 IEEE Nordic Signal Processing Symp. (NORSIG’96)*, pp. 359–362, Espoo, Finland, Sept. 24–27, 1996.
157. L. Savioja & V. Välimäki, “The bilinearly deinterpolated waveguide mesh,” in *Proc. 1996 IEEE Nordic Signal Processing Symp. (NORSIG’96)*, pp. 443–446, Espoo, Finland, Sept. 24–27, 1996.
158. V. Välimäki & T. I. Laakso, “Splitting the unit delay—digital filter approximations for fractional delay,” in *Proc. 1996 IEEE Nordic Signal Processing Symp. (NORSIG’96)*, pp. 479–482, Espoo, Finland, Sept. 24–27, 1996.
159. A. Tarczynski, V. Välimäki & G. D. Cain, “FIR filtering of nonuniformly sampled signals,” in *Proc. 1997 IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’97)*, vol. 3, pp. 2237–2240, Munich, Germany, Apr. 21–24, 1997.
160. V. Välimäki, R. Hänninen & M. Karjalainen, “An improved digital waveguide model of a flute—implementation issues,” in *Proc. 1996 Int. Computer Music Conf. (ICMC’96)*, pp. 1–4, Hong Kong, Aug. 19–24, 1996.
161. R. Hänninen & V. Välimäki, “An improved digital waveguide model of a flute with fractional delay filters,” in *Proc. 1996 Nordic Acoustical Meeting (NAM’96)*, pp. 437–444, Helsinki, Finland, June 12–14, 1996.
162. V. Välimäki, T. I. Laakso & J. Mackenzie, “Elimination of transients in time-varying allpass fractional delay filters with application to digital waveguide modeling,” in *Proc. 1995 Int. Computer Music Conf. (ICMC’95)*, pp. 327–334, Banff, Canada, Sept. 3–7, 1995.
163. M. Karjalainen, V. Välimäki, B. Hernoux & J. Huopaniemi, “Explorations of wind instruments using digital signal processing and physical modeling techniques,” in *Proc. 1995 Int. Computer Music Conf. (ICMC’95)*, pp. 509–516, Banff, Canada, Sept. 3–7, 1995.
164. M. Karjalainen & V. Välimäki, “New techniques of vocal tract modeling for articulatory speech synthesis,” in *Proc. XIIIth Int. Congr. Phonetic Sciences (ICPhS’95)*, vol. 2, pp. 450–453, Stockholm, Sweden, Aug. 13–19, 1995.

165. T. I. Laakso, V. Välimäki & J. Henriksson, “Tunable downsampling using fractional delay filters with applications to digital TV transmission,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’95)*, vol. 2, pp. 1304–1307, Detroit, Michigan, May 9–12, 1995.
166. V. Välimäki & M. Karjalainen, “Implementation of fractional delay waveguide models using allpass filters,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’95)*, vol. 2, pp. 1524–1527, Detroit, Michigan, May 9–12, 1995.
167. V. Välimäki, “A new filter implementation strategy for Lagrange interpolation,” in *Proc. IEEE Int. Symp. Circuits and Systems (ISCAS’95)*, vol. 1, pp. 361–364, Seattle, Washington, Apr. 29–May 3, 1995.
168. V. Välimäki & M. Karjalainen, “Improving the Kelly–Lochbaum vocal tract model using conical tube sections and fractional delay filtering techniques,” in *Proc. 1994 Int. Conf. Spoken Language Processing (ICSLP’94)*, vol. 2, pp. 615–618, Yokohama, Japan, Sept. 18–22, 1994.
169. Z. Jánosy, M. Karjalainen & V. Välimäki, “Intelligent synthesis control with applications to a physical model of the acoustic guitar,” in *Proc. Int. Computer Music Conf. (ICMC’94)*, pp. 402–406, Aarhus, Denmark, Sept. 12–17, 1994.
170. V. Välimäki & M. Karjalainen, “Digital waveguide modeling of wind instrument bores constructed of truncated cones,” in *Proc. Int. Computer Music Conf. (ICMC’94)*, pp. 423–430, Aarhus, Denmark, Sept. 12–17, 1994.
171. J. Huopaniemi, M. Karjalainen, V. Välimäki & T. Huutilainen, “Virtual instruments in virtual rooms— a real-time binaural room simulation environment for physical models of musical instruments,” in *Proc. 1994 Int. Computer Music Conf. (ICMC’94)*, pp. 455–462, Aarhus, Denmark, Sept. 12–17, 1994.
172. V. Välimäki, M. Karjalainen & T. Kuisma, “Articulatory speech synthesis based on fractional delay waveguide filters,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’94)*, vol. 1, pp. 585–588, Adelaide, Australia, Apr. 19–22, 1994.
173. V. Välimäki, M. Karjalainen & T. Kuisma, “Articulatory control of a vocal tract model based on fractional delay waveguide filters,” in *Proc. IEEE Int. Symp. Speech, Image Processing and Neural Networks (ISSIPNN’94)*, vol. 2, pp. 571–574, Hong Kong, Apr. 13–16, 1994.
174. M. Karjalainen & V. Välimäki, “Model-based analysis/synthesis of the acoustic guitar,” in *Proc. Stockholm Music Acoustics Conf. (SMAC 93)*, pp. 443–447, Stockholm, Sweden, July 28–Aug. 1, 1993, published in Oct. 1994.
175. V. Välimäki, M. Karjalainen & T. I. Laakso, “Fractional delay digital filters,” in *Proc. IEEE Int. Symp. on Circuits and Systems (ISCAS’93)*, vol. 1, pp. 355–358, Chicago, Illinois, May 3–6, 1993.
176. M. Karjalainen & V. Välimäki, “Implementation of real-time synthesis of string and wind instruments on a floating-point signal processor,” in *Proc. Sixth European Signal Processing Conference (EUSIPCO’92), Signal Processing VI: Theories and Applications*, vol. 3, pp. 1717–1720, Brussels, Belgium, Aug. 24–27, 1992.
177. V. Välimäki, T. I. Laakso, M. Karjalainen & U. K. Laine, “A new computational model for the clarinet,” in *Proc. Int. Computer Music Conf. (ICMC’93)*, Appendix (pages not numbered), San Jose, California, Oct. 14–18, 1992.
178. V. Välimäki, M. Karjalainen, Z. Jánosy & U. K. Laine, “A real-time DSP implementation of a flute model,” in *Proc. IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP’92)*, vol. 2, pp. 249–252, San Francisco, California, Mar. 23–26, 1992.

B. Unrefereed scientific articles

B.1. Unrefereed journal articles (12)

1. M. Müller, B. A. Pardo, G. J. Mysore & V. Välimäki, “Recent Advances in Music Signal Processing [From the Guest Editors],” *IEEE Signal Processing Magazine*, vol. 36, no. 1, pp. 17–19, Jan. 2019.
2. T. Lokki, M. Müller, S. Serafin & V. Välimäki, “Special issue on ‘Sound and music computing,’” *Applied Sciences*, vol. 8, no. 4, paper no. 518, Mar. 2018.
3. S. Nordholm, W. Kellermann, S. Doclo, V. Välimäki, S. Makino & J. R. Hershey, “From the guest editors: Signal processing techniques for assisted listening,” *IEEE Signal Processing Magazine*, vol. 32, no. 2, pp. 16–17, Mar. 2015.
4. J. Pakarinen, J. S. Abel, F. Fontana, V. Lazzarini & V. Välimäki, “Musical applications of real-time signal processing – Editorial,” *EURASIP Journal on Advances in Signal Processing*, doi:10.1186/1687-6180-2011-108, 2 pages, 2011.
5. V. Välimäki & V. Pulkki, “In memoriam: Matti Karjalainen (1946–2010),” *Journal of the Audio Engineering Society*, vol. 58, no. 6, pp. 534–535, June 2010.
6. V. Välimäki, F. Fontana, J. O. Smith & U. Zölzer, “Introduction to the Special Issue on Virtual Analog Audio Effects and Musical Instruments,” *IEEE Transactions on Audio, Speech and Language Processing*, vol. 18, no. 4, pp. 713–714, May 2010.
7. V. Välimäki, R. Rabenstein, D. Rocchesso, X. Serra & J. O. Smith, “Signal processing for sound synthesis – Computer-generated sounds and music for all (From the Guest Editors),” *IEEE Signal Processing Magazine*, vol. 24, no. 2, pp. 9–11, Mar. 2007.
8. V. Välimäki & A. Huovilainen, “Virtuaalista nostalgiaa – digitaalinen vähentävä äänisynteesi,” (Virtual nostalgia – Digital subtractive synthesis, text in Finnish) *Musiikki*, vol. 32, no. 1–2, pp. 78–89, 2005.
9. V. Välimäki, A. Sarti, M. Karjalainen, R. Rabenstein & L. Savioja, “Editorial: Special Issue on Model-Based Sound Synthesis,” *EURASIP Journal on Applied Signal Processing*, no. 7, pp. 923–925, 15 June 2004.
10. V. Välimäki, “Soitinmallinnus – fysikaalinen lähestymistapa soittimien tutkimukseen ja äänisynteesiin,” (Physical modeling—a new approach to research of musical instruments and sound synthesis, text in Finnish) *Musiikin suunta*, vol. 17, no. 2, pp. 38–49, Sept. 1995.
11. V. Välimäki, M. Karjalainen & J. Huopaniemi, “Kanteleen ja muiden kielisoittimien jäljittely tietokoneen avulla,” (Computer simulation of the kantele and other string instruments, text in Finnish) *Musiikin suunta*, vol. 17, no. 2, pp. 50–68, Sept. 1995.
12. Z. Jánosy & V. Välimäki, “Fizikai modell alapú digitális hangszintézis,” (in Hungarian) *Híradástechnika* (Telecommunications), pp. 21–24, vol. XLIII, Feb. 1992. A Hungarian version of the paper “Digital sound synthesis by semi-physical modeling” that won the Best Paper Award at the *1991 Scientific Student’s Conference of the Technical University of Budapest*, Budapest, Hungary, Sept. 1991.

B.2. Book sections (3)

1. V. Välimäki, S. Bilbao, J. O. Smith, J. S. Abel, J. Pakarinen & D. P. Berners, “Virtual analog effects,” in U. Zölzer (ed.), *DAFX – Digital Audio Effects, Second Edition*. Wiley, Chichester, UK, 2011. Chapter 12, pp. 473–522.
2. C. Erkut, V. Välimäki, M. Karjalainen & H. Penttinen, “Physics-based sound synthesis,” in P. Polotti and D. Rocchesso (eds.), *Sound to Sense—Sense to Sound: A State of the Art in Sound and Music Computing*. Logos Verlag Berlin GmbH, 2008. Chapter 8, pp. 303–343.

3. V. Välimäki & T. I. Laakso, “Fractional delay filters—Design and applications,” in F. Marvasti (ed.), *Nonuniform Sampling: Theory and Practice*. Kluwer Academic/Plenum Publishers, New York, 2001. Chapter 20, pp. 835–896.

B.3. Unrefereed conference articles (52)

1. D. Kartofelev, A. Stulov & V. Välimäki, “Pitch glide effect induced by a nonlinear string–barrier interaction,” in *Proc. 20th Int. Symp. Nonlinear Acoustics*, Lyon, France, June 29–July 3, 2015.
2. M. Mustonen, D. Kartofelev, A. Stulov & V. Välimäki, “Application of high-speed line scan camera for acoustic measurements of vibrating objects,” in *Proc. Forum Acusticum 2014*, Krakow, Poland, Sept. 2014.
3. M. Mustonen, D. Kartofelev, A. Stulov & V. Välimäki, “Experimental verification of pickup nonlinearity,” in *Proc. Int. Symp. Musical Acoustics (ISMA 14)*, pp. 651–656, Le Mans, France, July 2014.
4. D. Kartofelev, M. Mustonen, A. Stulov & V. Välimäki, “Application of high-speed line scan camera for string vibration measurements,” in *Proc. Int. Symp. Musical Acoustics (ISMA 14)*, pp. 629–634, Le Mans, France, July 2014.
5. J. Rämö, M. Marti & V. Välimäki, “Evaluation and simulation of headphone characteristics through acoustic measurements,” in *Proc. Baltic-Nordic Acoustics Meeting (BNAM14)*, pp. 454–461, Tallinn, Estonia, June 2014.
6. M. Pämies-Vilà, I. A. Kubilay, D. Kartofelev, M. Mustonen, A. Stulov & V. Välimäki, “High-speed line-camera measurement of a vibrating string,” in *Proc. Baltic-Nordic Acoustics Meeting (BNAM14)*, pp. 447–453, Tallinn, Estonia, June 2014.
7. J. Rinne, J. Pölkki, H. Tahvanainen & V. Välimäki, “Mechanical distortion in plucked string instruments,” in *Proc. Baltic-Nordic Acoustics Meeting (BNAM14)*, pp. 296–303, Tallinn, Estonia, June 2014.
8. L. Gabrielli, M. Giobbi, S. Squartini & V. Välimäki, “Adaptive digital oscillator for virtual acoustic feedback,” presented at the 136th Audio Eng. Soc. Convention (AES136), Convention paper no. 9066, Berlin, Germany, April 2014.
9. S. Stulov, V. Välimäki & H.-M. Lehtonen, “Modeling of the part-pedaling effect in the piano,” in *Proc. ACUSTICS 2012*, pp. 1223–1228, Nantes, France, April 2012.
10. L. Gabrielli, S. Squartini & V. Välimäki, “A subjective validation method for musical instrument emulation,” in *Proc. 131st Audio Eng. Soc. Convention*, New York, Oct. 2011.
11. L. Savioja, V. Välimäki & J. O. Smith, “Real-time additive synthesis with one million sinusoids using a GPU,” published at the AES 128th Convention (AES128), pp. 1-9, number 7962, London, UK, May 22-25, 2010.
12. K.-S. Lee, J. S. Abel, V. Välimäki & D. P. Berners, “The switched convolution reverberator,” presented at the 127th AES Convention, New York, NY, Oct. 2009.
13. S. Oksanen, T. Pirinen & V. Välimäki, “Subjective assessment of percussive drilling sounds,” in *Proc. Internoise 2009*, Ottawa, Canada, Aug. 23–26, 2009.
14. H.-M. Lehtonen, J. Rauhala & V. Välimäki, “Towards the next generation digital pianos,” in *Proc. 1st European Conference on Science, Art and Technology*, pp. 53–57, Helsinki, Finland, Sept. 7–9, 2006.
15. M. Karjalainen, P. Antsalo, A. Mäkipirta & V. Välimäki, “Perception of temporal decay of low-frequency room modes,” presented at the AES 116th Convention, paper no. 6083, Berlin, Germany, May 8–11, 2004.
16. P. Esquef & V. Välimäki, “Design of an efficient inharmonic digital waveguide filter for synthesis of hand-bell sounds,” in *Proc. 2003 Finnish Signal Processing Symp. (FINSIG’03)*, Tampere, Finland, May 19, 2003. See: <http://www.cs.tut.fi/finsig03/>.

17. J. Pakarinen, M. Karjalainen & V. Välimäki, “Sound synthesis model for a nonlinear vibrating string using distributed fractional delay elements,” in *Proc. 2003 Finnish Signal Processing Symp. (FINSIG’03)*, Tampere, Finland, May 19, 2003. See <http://www.cs.tut.fi/finsig03/>.
18. P. Antsalu, M. Karjalainen, A. Mäkivirta & V. Välimäki, “Comparison of modal equalizer design methods,” presented at the AES 114th Convention, preprint 5844, Amsterdam, The Netherlands, Mar. 22–25, 2003.
19. M. Karjalainen, P. Antsalu, P. Esquef, A. Mäkivirta & V. Välimäki, “AR/ARMA analysis and modeling of modes in resonant and reverberant systems,” presented at the AES 112th Convention, preprint 5590, Munich, Germany, May 10–13, 2002.
20. P. Esquef, L. W. P. Biscainho, V. Välimäki & M. Karjalainen, “Removal of long pulses from audio signals using two-pass split-window filtering,” presented at the AES 112th Convention, preprint 5535, Munich, Germany, May 10–13, 2002.
21. Mäkivirta, P. Antsalu, M. Karjalainen & V. Välimäki, “Low-frequency modal equalization of loudspeaker-room responses,” presented at the AES 111th Convention, preprint 5480, New York, Nov. 30–Dec. 3, 2001.
22. P. Esquef, V. Välimäki & M. Karjalainen, “Audio restoration using sound source modeling,” in *Proc. 2001 Finnish Signal Processing Symp. (FINSIG’01)*, pp. 47–50, Espoo, Finland, June 5, 2001. Available at <http://wooster.hut.fi/finsig01>.
23. P.A.A. Esquef, V. Välimäki & M. Karjalainen, “Restoration and enhancement of instrumental recordings based on sound source modeling,” presented at the AES 110th Convention, preprint 5331, Amsterdam, The Netherlands, May 12–15, 2001.
24. M. Antila, J. Kataja & V. Välimäki, “Sound directivity control using striped panel loudspeaker,” presented at the AES 110th Convention, preprint 5306, Amsterdam, The Netherlands, May 12–15, 2001.
25. M. Karjalainen, P. Antsalu, A. Mäkivirta, T. Peltonen & V. Välimäki, “Estimation of modal decay parameters from noisy response measurements,” presented at the AES 110th Convention, preprint 5290, Amsterdam, The Netherlands, May 12–15, 2001.
26. E. Brattico, R. Näätänen, T. Verma, V. Välimäki & M. Tervaniemi, “Processing of musical intervals in the central auditory system: an event-related potential (ERP) study on sensory consonance,” presented at the *6th Int. Conf. Music Perception and Cognition*, Keele University, UK, Aug. 5–10, 2000.
27. Härmä, M. Karjalainen, L. Savioja, V. Välimäki, U. K. Laine & J. Huopaniemi, “Frequency-warped signal processing for audio applications,” presented at the *AES 108th Convention*, preprint no. 5171, 42 p., Paris, France, Feb. 19–22, 2000.
28. Erkut, V. Välimäki, M. Karjalainen & M. Laurson, “Extraction of physical and expressive parameters for model-based sound synthesis of the classical guitar,” presented at the *AES 108th Convention*, preprint no. 5114, 17 p., Paris, France, Feb. 19–22, 2000.
29. V. Välimäki, S. Uosukainen & P. Diniz, “Design of unidirectional sources for active control of noise in ducts,” in *Proc. Sixth Int. Congr. Sound and Vibration (ICSV6)*, vol. 4, pp. 1627–1634, Lyngby, Denmark, July 5–8, 1999.
30. C. Erkut, T. Tolonen, M. Karjalainen & V. Välimäki, “Acoustical analysis of tanbur, a Turkish long-necked lute,” in *Proc. Sixth Int. Congr. Sound and Vibration (ICSV6)*, vol. 1, pp. 345–352, Lyngby, Denmark, July 5–8, 1999.
31. T. Tolonen & V. Välimäki, “Analysis/synthesis representation of musical signals using sound source modeling,” in *Proc. Finnish Signal Processing Symp. (FINSIG’99)*, pp. 98–102, Oulu, Finland, May 31, 1999.

32. M. Karjalainen, V. Välimäki, H. Räisänen & H. Saastamoinen, “DSP equalization of electret film pickup for the acoustic guitar,” presented at the *AES 106th Convention*, preprint no. 4907, Munich, Germany, May 8–11, 1999.
33. V. Välimäki & T. Tolonen, “Development and calibration of a guitar synthesizer,” presented at the *AES 103rd Convention*, preprint no. 4594, New York, NY, Sept. 26–29, 1997.
34. T. Tolonen & V. Välimäki, “Automated parameter extraction for plucked string synthesis,” in *Proc. Int. Symp. Musical Acoustics 1997 (ISMA’97)*, vol. 1, pp. 245–250, Edinburgh, Scotland, Aug. 19–22, 1997.
35. V. Välimäki, M. Antila, S. Rantala & J. Linjama, “Adaptive noise cancellation in a ventilation duct using a digital signal processor,” in *Proc. DSP Scandinavia ’97 Conf.*, pp. 151–156, Stockholm, Sweden, June 3–4, 1997.
36. T. Tolonen & V. Välimäki, “Analysis and synthesis of guitar tones using digital signal processing methods,” in *Proc. 1997 Finnish Signal Processing Symp. (FINSIG’97)*, pp. 1–5, Pori, Finland, May 22, 1997. This paper received the Excellent Paper Award.
37. T. Takala, R. Hänninen, V. Välimäki, L. Savioja, J. Huopaniemi, T. Huutilainen & M. Karjalainen, “An integrated system for virtual audio reality,” presented at the *100th AES Convention*, preprint no. 4229, 46 p., Copenhagen, Denmark, May 11–14, 1996.
38. V. Välimäki, M. Karjalainen & J. Huopaniemi, “Measurement, estimation, and modeling of wind instruments using DSP techniques,” in *Proc. 15th Int. Congr. Acoustics (ICA’95)*, vol. 3, pp. 513–516, Trondheim, Norway, June 26–30, 1995.
39. M. Karjalainen, J. Huopaniemi & V. Välimäki, “Direction-dependent physical modeling of musical instruments,” in *Proc. 15th Int. Congr. Acoustics (ICA’95)*, vol. 3, pp. 451–454, Trondheim, Norway, June 26–30, 1995.
40. J. Huopaniemi, M. Karjalainen & V. Välimäki, “Physical models of musical instruments in real-time binaural room simulation,” in *Proc. 15th Int. Congr. Acoustics (ICA’95)*, vol. 3, pp. 447–450, Trondheim, Norway, June 26–30, 1995.
41. V. Välimäki, B. Hernoux, J. Huopaniemi & M. Karjalainen, “Measurement and analysis of acoustic tubes using signal processing techniques,” in *Proc. 1995 Finnish Signal Processing Symposium (FINSIG’95)*, pp. 16–20, Espoo, Finland, June 2, 1995.
42. V. Välimäki, T. I. Laakso & J. Mackenzie, “Time-varying fractional delay filters,” in *Proc. 1995 Finnish Signal Processing Symposium (FINSIG’95)*, pp. 118–122, Espoo, Finland, June 2, 1995.
43. V. Välimäki, “Fractional delay waveguide filters for modeling acoustic tubes,” in *Proc. Second Int. Conf. Acoustics and Music Research (CIARM’95)*, pp. 41–46, Ferrara, Italy, May 19–21, 1995.
44. V. Välimäki, J. Huopaniemi, M. Karjalainen & Z. Jánosy, “Physical modeling of plucked string instruments with application to real-time sound synthesis,” presented at the *98th AES Int. Convention 1995*, preprint no. 3956, 52 p., Paris, France, Feb. 25–28, 1995.
45. V. Välimäki, “New structures for fractional delay filtering,” in *Proc. Tampere University of Technology Symp. on Signal Processing ’94*, pp. 104–107, Tampere, Finland, May 20, 1994.
46. V. Välimäki, M. Karjalainen & T. I. Laakso, “Modeling of woodwind bores with finger holes,” in *Proc. Int. Computer Music Conf. (ICMC’93)*, pp. 32–39, Tokyo, Japan, Sept. 10–15, 1993.
47. M. Karjalainen, V. Välimäki & Z. Jánosy, “Towards high-quality synthesis of the guitar and string instruments,” in *Proc. Int. Computer Music Conf. (ICMC’93)*, pp. 56–63, Tokyo, Japan, Sept. 10–15, 1993.
48. J. Vuori & V. Välimäki, “Parameter estimation of nonlinear physical models by simulated evolution—application to the flute model,” in *Proc. Int. Computer Music Conf. (ICMC’93)*, pp. 402–404, Tokyo, Japan, Sept. 10–15, 1993.

49. T. I. Laakso, V. Välimäki, M. Karjalainen & U. K. Laine, “Real-time implementation techniques for a continuously variable digital delay in modeling musical instruments,” in *Proc. Int. Computer Music Conf. (ICMC’92)*, pp. 140–141, San Jose, California, Oct. 14–18, 1992.
50. M. Karjalainen, V. Välimäki, T. Altosaar & S. Helle, “The QuickSig system and its computer music applications,” in *Proc. Int. Computer Music Conf. (ICMC’92)*, pp. 390–391, San Jose, California, Oct. 14–18, 1992.
51. M. Karjalainen, U. K. Laine & V. Välimäki, “Aspects in modeling and real-time synthesis of the acoustic guitar,” in *Proc. 1991 IEEE ASSP Workshop on Applications of Signal Processing to Audio and Acoustics* (pages not numbered), New Paltz, New York, Oct. 20–23, 1991.
52. M. Karjalainen, U. K. Laine, T. I. Laakso & V. Välimäki, “Transmission-line modeling and real-time synthesis of string and wind instruments,” in *Proc. Int. Computer Music Conf. (ICMC’91)*, pp. 293–296, Montreal, Canada, Oct. 16–20, 1991.

C. Special issues of a journal (8)

1. M. Müller, B. A. Pardo, G. J. Mysore & V. Välimäki (guest editors), “Recent advances in music signal processing,” *IEEE Signal Processing Magazine*, vol. 36, no. 1, Jan. 2019.
2. T. Lokki, M. Müller, S. Serafin & V. Välimäki (guest editors), Special issue on “Sound and music computing,” *Applied Sciences*, 2017–2018. Available online at http://www.mdpi.com/journal/applsci/special_issues/Music_Computing, ISBN 978-3-03842-907-4 (Pbk), 610 pages.
3. V. Välimäki (Guest Editor), Special issue on “Audio signal processing,” *Applied Sciences*, 2015–2016. Available online at http://www.mdpi.com/journal/applsci/special_issues/audio_signal_processing.ISBN_978-3-03842-350-8 (Pbk), 433 pages.
4. S. Nordholm, W. Kellermann, S. Doclo, V. Välimäki, S. Makino & J. R. Hershey (guest editors), Special issue on “Signal processing techniques for assisted listening,” *IEEE Signal Processing Magazine*, Mar. 2015.
5. J. Pakarinen, J. S. Abel, F. Fontana, V. Lazzarini & V. Välimäki (guest editors), Special issue on “Musical applications of real-time signal processing,” *EURASIP Journal on Advances in Signal Processing*, spring 2011.
6. V. Välimäki (Lead Guest Editor), F. Fontana, J. O. Smith & U. Zölzer (guest editors), Special issue on “Virtual analog audio effects and musical instruments,” *IEEE Transactions on Audio, Speech and Language Processing*, May 2010.
7. V. Välimäki (Lead Guest Editor), R. Rabenstein, D. Rocchesso, X. Serra & J. O. Smith (guest editors), Special issue on “Signal processing for sound synthesis,” *IEEE Signal Processing Magazine*, Mar. 2007.
8. V. Välimäki (Lead Guest Editor), A. Sarti, M. Karjalainen, R. Rabenstein, L. Savioja (guest editors), Special issue on “Model-based sound synthesis,” *EURASIP Journal on Applied Signal Processing*, July 2004.

D. Publications intended for professional communities (50)

1. V. Mäntyniemi & V. Välimäki, “Äänisynteesi työkonesimulaattoreissa,” in *Proc. Akustiikkapäivät 2015*, pp. 65–71, Kuopio, Finland, Sept. 1–2, 2015.
2. V. Mäntyniemi, R. Mignot & V. Välimäki, *REMES Final Report – The Finnish Work Environment Fund TSR Project no. 113252*. Aalto University publication series Science + Technology 16/2014, Helsinki, Finland, 2014. Available online at <https://aaltodoc.aalto.fi/handle/123456789/14705>.
3. J. Rämö, M. Tikander & V. Välimäki, “Psykoakustinen adaptiivinen ekvalisaattori kuulokekuunteluun melussa,” in *Proc. Akustiikkapäivät 2013*, Turku, Finland, pp. 87–92. May 22–23, 2013. Available online at <http://www.akustinenseura.fi/akustiikkapaivat/akustiikkapaivat-2013/>.

4. H.-M. Lehtonen, J. Pekonen & V. Välimäki, "Laskostumisen havaitseminen saha-aallossa," in *Proc. Akustiikkapäivät 2013*, pp. 93–98, Turku, Finland, May 22–23, 2013.
5. V. Välimäki, H.-M. Lehtonen & J. Kleimola, "Samettikohina," in *Proc. Akustiikkapäivät 2013*, Turku, Finland, pp. 99–104, May 22–23, 2013.
6. O. Oksa, S. Oksanen & V. Välimäki, "Palvelinsalien työympäristön meluanalyysi," in *Proc. Akustiikkapäivät 2013*, Turku, Finland, pp. 111–116, May 22–23, 2013.
7. J. Parker, S. Oksanen, A. Politis & V. Välimäki, "Measuring and modelling the reverberation of a bare rock tunnel," in *Proc. Akustiikkapäivät 2013*, Turku, Finland, pp. 183–188, May 22–23, 2013.
8. H. Tahvanainen, J. Pölkki, H. Penttinen & V. Välimäki, "Äänekkäämmän kanteleen mallintaminen elementtimenetelmällä," in *Proc. Akustiikkapäivät 2013*, Turku, Finland, pp. 237–242, May 22–23, 2013.
9. S. Oksanen, J. Parker & V. Välimäki, "Vibroacoustic analysis and synthesis of struck metal bars using musical instrument modeling techniques," in *Proc. Akustiikkapäivät 2013*, Turku, Finland, pp. 243–248, May 22–23, 2013.
10. J. Pekonen & V. Välimäki, "Digitaalinen vähentävä synteesi: Laskostumattomien oskillaattoreiden historia ja suomalaisten rooli tutkimuksessa," in *Proc. Celebration Symposium: Finnish Music Research 100 Years* (Suomen musiikkitiede 100 vuotta -juhlasymposiumi), pp. 101–108, Helsinki, Finland, March 15–18, 2011.
11. S. Oksanen, T. Pirinen & V. Välimäki, "Kallioporausäänten subjektiivinen arviointi," in *Proc. Akustiikkapäivät 2009*, pp. 146–152, Vaasa, Finland, May 14–15, 2009.
12. J. Pekonen & V. Välimäki, "Virtuaalianalogiasynteesin lyhyt historia," in *Proc. Akustiikkapäivät 2011*, pp. 45–50, Tampere, Finland, May 11–12, 2011.
13. J. Rämö, M. Alanko, M. Tikander & V. Välimäki, "Tulppakuulokkeiden akustiikka," in *Proc. Akustiikkapäivät 2011*, pp. 273–278, Tampere, Finland, May 11–12, 2011.
14. J. Pakarinen, H. Penttinen, V. Välimäki, J. Pekonen, J. Seppänen, F. Bevilacqua, O. Warusfel & G. Volpe, *Review of Sound Synthesis and Effects Processing for Interactive Mobile Applications*. Report no. 8, TKK Department of Signal Processing and Acoustics Report Series, March 2009. ISBN 978-951-22-9790-0. ISSN 1797-4267. Available on-line at: <http://www.acoustics.hut.fi/publications/papers/MobileSynthAndFXReport/>.
15. J. Pakarinen, C. Erkut, H. Penttinen & V. Välimäki (eds.), *DAFx-08 Proceedings – 11th International Conference on Digital Audio Effects*, Espoo, Finland, Sept. 1–4, 2008.
16. H.-M. Lehtonen, H. Penttinen, J. Rauhala & V. Välimäki, "Kaikupedaalin vaikutukset pianon ääneen: analyysi ja synteesi," in *Proc. Akustiikkapäivät 2007*, pp. 136–141, Espoo, Finland, Sept. 27–28, 2007.
17. H. Penttinen, V. Välimäki & A. Vänttinen, "Rumpujen äänen vaimentaminen," in *Proc. Akustiikkapäivät 2007*, pp. 142–147, Espoo, Finland, Sept. 27–28, 2007.
18. V. Välimäki, S. González, J. Parviainen & O. Kimmelma, "Musiikkiäänitteiden patinointi signaalinkäsittelyn avulla," in *Proc. Akustiikkapäivät 2007*, pp. 148–153, Espoo, Finland, Sept. 27–28, 2007.
19. J. Rauhala, M. Laurson, V. Välimäki & H.-M. Lehtonen. *Physics-based Piano Synthesizer*. Report no. 84, Helsinki University of Technology, Lab. of Acoustics and Audio Signal Processing, Espoo, Finland, 2007.
20. A. Kelloniemi, P. Huang, V. Välimäki & L. Savioja. *Spatial Audio and Reverberation Modeling using Hyperdimensional Digital Waveguide Meshes*. Report no. 80, Helsinki University of Technology, Lab. of Acoustics and Audio Signal Processing, Espoo, Finland, Nov. 2006.
21. H. Penttinen, J. Pölkki, V. Välimäki, M. Karjalainen & C. Erkut, "Äänekkäämmän kanteleen suunnittelu ja analyysi," in *Proc. Akustiikkapäivät 2005*, pp. 42–47, Kuopio, Finland, Sept. 26–27, 2005. In Finnish.

22. H. Penttinen, J. Pakarinen, V. Välimäki & M. Laurson, "Kiinalaisen kielisoittimen mallipohjainen äänisynteesi," in *Proc. Akustiikkapäivät 2005*, pp. 54–59, Kuopio, Finland, Sept. 26–27, 2005. In Finnish.
23. H.-M. Lehtonen, J. Rauhala & V. Välimäki, "Pianon äänen analyysi ja synteesi," in *Proc. Akustiikkapäivät 2005*, pp. 36–41, Kuopio, Finland, Sept. 26–27, 2005.
24. A. Kelloniemi & V. Välimäki, "Kolmiulotteisen tilan akustiikan mallintaminen kaksiulotteisia aaltojohtoverkkoja käyttäen," in *Proc. Akustiikkapäivät 2005*, pp. 95–100, Kuopio, Finland, Sept. 26–27, 2005.
25. O. Kimmelma, J. Parviainen & V. Välimäki, "Musiikkiäänitteiden digitaalinen vanhentaminen," in *Proc. IX musiikintutkijoiden symposium*, pp. 55–58, Jyväskylä, Finland, Mar. 17–19, 2005.
26. M. Laurson, H. Penttinen & V. Välimäki, "Väresuotimen sovelluksia kitarasynteesissä," in *Proc. IX musiikintutkijoiden symposium*, pp. 78–81, Jyväskylä, Finland, Mar. 17–19, 2005.
27. H. Penttinen & V. Välimäki, "Akustisen kitaran näppäyskohdan arviointi," in *Proc. IX musiikintutkijoiden symposium*, pp. 114–118, Jyväskylä, Finland, Mar. 17–19, 2005.
28. J. Rauhala & V. Välimäki, "Pianon äänen synteesi," in *Proc. IX musiikintutkijoiden symposium*, pp. 129–132, Jyväskylä, Finland, Mar. 17–19, 2005.
29. V. Välimäki, H. Penttinen, J. Knif, M. Laurson & C. Erkut, "Cembalon äänen analyysi ja synteesi," in *Proc. Akustiikkapäivät 2003*, pp. 129–134, Turku, Finland, Oct. 6–7, 2003. Available at <http://www.akustinenseura.fi/akustiikkapaivat/akustikkapaivat-2003/>.
30. V. Välimäki & M. Rahkila, "Uuden signaalinkäsittelyn opintojakson perustaminen opiskelijoita aktivoivia menetelmiä hyödyntäen," in A.-M. Ahonen and A. Yanar, *Yopas yotakin! Opettajien oivalluksia opetuksesta – YOOP 2000 -kursin opetuksen kehittämishankeraportit*, pp. 23–33, TKK, Opetuksen ja opiskelun tuki, Espoo, Finland, 2002.
31. V. Välimäki, "Äänen mallinnus ja synteesi," in *Symposium on Modeling and Simulation*, J. Hämäläinen & R. Lähdemäki-Taipalus (Eds.), pp. 27–36, Finnish Defence Forces Technical Research Centre (Puolustusvoimien teknillinen tutkimuslaitos), Publication no. 5, Riihimäki, Finland, Mar. 7, 2002.
32. H. Penttinen, V. Välimäki & M. Karjalainen, "Kitaraefektejä kaikukoppamalleilla," in *Proc. Akustiikkapäivät 2001*, pp. 11–16, Espoo, Finland, Oct. 8–9, 2001. Available at <http://www.acoustics.hut.fi/asf/publicat/akup01/akup01artikkelit.html>.
33. M. Laurson, V. Välimäki & M. Kuuskankare, "Kitaramusiikin korkealaatuinen synteesi," in *Proc. Akustiikkapäivät 2001*, pp. 17–22, Espoo, Finland, Oct. 8–9, 2001. Available at <http://www.acoustics.hut.fi/asf/publicat/akup01/akup01artikkelit.html>.
34. V. Välimäki & M. Laurson, "Klavikordin äänen synteesi," in *Proc. Akustiikkapäivät 2001*, pp. 23–28, Espoo, Finland, Oct. 8–9, 2001. Available at <http://www.acoustics.hut.fi/asf/publicat/akup01/akup01artikkelit.html>.
35. V. Välimäki & L. Savioja, "Edistysaskelia moniulotteisen aaltoliikkeen mallinnuksessa," in *Proc. Akustiikkapäivät 1999*, pp. 59–64, Tampere, Finland, Oct. 4–5, 1999.
36. H. Järveläinen, V. Välimäki & M. Karjalainen, "Epäharmonisuuden havaitseminen kielisoittinten äänessä," in *Proc. Akustiikkapäivät 1999*, pp. 87–92, Tampere, Finland, Oct. 4–5, 1999.
37. C. Erkut, T. Tolonen, M. Karjalainen & V. Välimäki, "Acoustics of tanbur, a Turkish long-necked lute," in *Proc. Akustiikkapäivät 1999*, pp. 93–98, Tampere, Finland, Oct. 4–5, 1999.
38. S. Uosukainen & V. Välimäki, *Unidirectional JMC Actuators and Their Approximations in the Active Attenuation of Noise in Ducts*. Technical Report. VTT Publications 341, Espoo, Finland, Apr. 1998.

39. V. Välimäki & M. Karjalainen (eds.), *Signaalinkäsittely audiotekniikassa, akustiikassa ja musiikissa*. (Signal Processing in Audio, Acoustics, and Music, text mostly in Finnish). Report no. 50, Helsinki University of Technology, Dept. of Electrical and Communications Engineering, Lab. of Acoustics and Audio Signal Processing, Espoo, Finland, 329 p., Dec. 1998.
40. M. Karjalainen & V. Välimäki (eds.), *Äänenlaatu*. (Sound Quality, text mostly in Finnish). Report no. 49, Helsinki University of Technology, Dept. of Electrical and Communications Engineering, Lab. of Acoustics and Audio Signal Processing, Espoo, Finland, 282 p., Apr. 1998.
41. T. Tolonen, V. Välimäki & M. Karjalainen, *Evaluation of Modern Sound Synthesis Methods*. Report no. 48, Helsinki University of Technology, Dept. of Electrical and Communications Engineering, Lab. of Acoustics and Audio Signal Processing, Espoo, Finland, 114 p., March 1998. Available at http://www.acoustics.hut.fi/~ttolonen/sound_synth_report.html.
42. V. Välimäki & M. Karjalainen (eds.), *Aktiivisen melunvaimennuksen signaalinkäsittelyalgoritmit*. (Signal Processing Algorithms for Active Noise Control, text in Finnish). Report no. 45, Helsinki University of Technology, Dept. of Electrical and Communications Engineering, Lab. of Acoustics and Audio Signal Processing, Espoo, Finland, 215 p., Nov. 1997.
43. V. Välimäki, M. Antila, S. Rantala & J. Linjama, “Aktiivinen melunvaimennus ilmastointiputkessa,” in *Proc. Akustiikkapäivät 1997*, pp. 37–44, Espoo, Finland, Oct. 8–9, 1997.
44. S. Uosukainen & V. Välimäki, “Viiveetön kaksielementtinen yksisuuntainen äänilähde aaltoputkessa,” in *Proc. Akustiikkapäivät 1997*, pp. 45–50, Espoo, Finland, Oct. 8–9, 1997.
45. T. Tolonen & V. Välimäki, “Akustisen kitaran äänisynteesi,” in *Proc. Akustiikkapäivät 1997*, pp. 107–112, Espoo, Finland, Oct. 8–9, 1997.
46. M. Karjalainen & V. Välimäki (eds.), *Akustisten järjestelmien diskreettiaikaiset mallit ja soittimien mallipohjainen äänisynteesi*. (Discrete-Time Models of Acoustic Systems and Model-Based Sound Synthesis of Musical Instruments, text in Finnish). Report no. 39, Helsinki University of Technology, Faculty of Electrical Engineering, Lab. of Acoustics and Audio Signal Processing, Espoo, Finland, 174 p., Dec. 1995.
47. V. Välimäki & M. Karjalainen, “Puhallinsoittimien akustiset mittaukset ja mallintaminen,” (Acoustic measurements and modeling of wind instruments, text in Finnish), in *Proc. Akustiikkapäivä 1995*, pp. 75–80, Tampere, Finland, Oct. 25–26, 1995.
48. V. Välimäki & M. Karjalainen, “Uusia menetelmiä ääniväylän mallintamiseen,” (New methods for modeling the vocal tract, text in Finnish), *Fonetiikan Päivät 1994*, Tampere, Finland, Sept. 2–3, 1994, in Michael O’Dell (ed.), *Papers from the 18th Meeting of Finnish Phoneticians*, pp. 29–44, Folia Fennica & Linguistics, no. 18, University of Tampere, Tampere, Finland, Nov. 1995.
49. T. I. Laakso, V. Välimäki, M. Karjalainen & U. K. Laine, *Crushing the Delay—Tools for Fractional Delay Filter Design*. Report no. 35, Helsinki University of Technology, Faculty of Electrical Engineering, Lab. of Acoustics and Audio Signal Processing, Espoo, Finland, 46 p., Oct. 1994.
50. V. Välimäki & M. Karjalainen, “Soittimien laskennallinen mallintaminen,” (Computational modeling of musical instruments, text in Finnish), in *Proc. Akustiikkapäivä 1993 – Akustinen Seura 50 Vuotta* (*Acoustical Day 1993*, biannual meeting of the Acoustical Society of Finland), pp. 53–60, Helsinki, Finland, Oct. 20, 1993.

E. Publications intended for the general public (5)

1. V. Välimäki, “Musiikkiakustiikka,” in T. Eerola, J. Louhivuori & P. Moisala (Eds.), *Johdatus musiikintutkimukseen*, pp. 241–250, Suomen Musiikkitieteellinen Seura, 2003.

2. M. Salavuo, P. Toiviainen & V. Välimäki, “Teknologia musiikintutkimuksessa,” in T. Eerola, J. Louhivuori & P. Moisala (eds.), *Johdatus musiikintutkimukseen*, pp. 327–336, Suomen Musiikkitieteellinen Seura, 2003.
3. V. Välimäki, “50 vuotta äänenkäsittelyä,” *Proessori*, pp. 38–42, no. 5, 1999.
4. M. Karjalainen & V. Välimäki, “Tietokone uudistaa soittimen,” *Tiede 2000* (*Science 2000*, a popular scientific magazine), vol. 15, no. 6, pp. 29–31, Sept. 14, 1995.
5. M. Karjalainen & V. Välimäki, “Computers as musical instruments,” *Polysteekki* (Bulletin of the Helsinki University of Technology), no. 6, pp. 2–3, 1994.

G. Thesis

1. V. Välimäki, *Discrete-Time Modeling of Acoustic Tubes Using Fractional Delay Filters*. Doctoral thesis. Report no. 37, Helsinki University of Technology, Faculty of Electrical Engineering, Laboratory of Acoustics and Audio Signal Processing, Espoo, Finland, 193 p., Dec. 1995. Available at http://www.acoustics.hut.fi/~vpv/publications/vesa_phd.html.

H. Patents and patent applications (4 + 3)

1. R. Väänänen, S. Vesa, J. Rämö & V. Välimäki, “An apparatus, method and computer program for providing an audio signal,” *International Patent Application*, PCT 15/068878, Mar. 2016.
2. M. Karjalainen, A. Mäkivirta, P. Antsalo & V. Välimäki, “Method for designing a modal equalizer for a low frequency sound reproduction,” *United States Patent 7,742,607 B2*, June 22, 2010.
3. T. Salmi, T. Salmi, A. Jylhä, V. Välimäki & Cumhur Erkut, “System for sports activity,” *International Patent Application No. PCT/FI2008/050624*, Oct. 31, 2008.
4. J. Ruokangas, M. Koskinen, V. Välimäki, H. Penttinen & A. Haghparast, “Method and system for modification of audio signals,” *United States Patent Application 20070191976*, Aug. 16, 2007.
5. M. Karjalainen, A. Mäkivirta, P. Antsalo & V. Välimäki, “Method for designing a modal equalizer for a low frequency audible range especially for closely positioned modes,” *United States Patent 7,286,674 B2*, Oct. 23, 2007.
6. S. Uosukainen, V. Välimäki, K. Kirjavainen, J. Leikkala & H. Nykänen, “Method and equipment for attenuating sound in a duct,” *United States Patent no. 6,847,722 B1*, Date of Patent: Jan. 25, 2005.
7. V. Välimäki, J. Henriksson & T. I. Laakso, “Method and circuit arrangement for processing received signal,” *United States Patent no. 5,812,608*, Date of Patent: Sept. 22, 1998.