

List of Publications

Panu Maijala

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- [1] Carsten L. Fog, Truls Gjestland, Mendel Kleiner, Panu P. Maijala, and Torben Holm Pedersen. Part 1: Measurement Positions for Measurement of Loudness. Technical Report NT AV 1457/01, Delta, 2001.
- [2] Torben Holm Pedersen, Truls Gjestland, Mendel Kleiner, Panu P. Maijala, and Carsten L. Fog. Part 2: Guidelines for Listening Tests. Technical Report NT AV 1456/01, Delta, 2001.
- [3] Carsten L. Fog, Truls Gjestland, Mendel Kleiner, Panu P. Maijala, and Torben Holm Pedersen. *Acoustics: Human Sound Perception - Measurement Positions for Measurement of Loudness*, pages 1–7. Number NT ACOU 110 in Nordtest Methods. Nordtest, May 2002.
- [4] Torben Holm Pedersen, Truls Gjestland, Mendel Kleiner, Panu P. Maijala, and Carsten L. Fog. *Acoustics: Human Sound Perception - Guidelines for Listening Tests*, pages 1–13. Number NT ACOU 111 in Nordtest methods. Nordtest, May 2002.
- [5] Panu Maijala, Anu Turunen, Ilmari Kurki, Lari Vainio, Satu Pakarinen, Crista Kaukinen, Kristian Lukander, Pekka Tiittanen, Tarja Yli-Tuomi, Pekka Taimisto, Timo Lanki, Kaisa Tiippana, Jussi Virkkala, Emma Stickler, and Markku Sainio. *Infrasound Does Not Explain Symptoms Related to Wind Turbines*. Technical Report 2020:34, Finnish Government’s Analysis, Assessment and Research Activities, jun 2020. URL <http://urn.fi/URN:ISBN:978-952-287-907-3>.

- [6] Panu P. Maijala. Tuulivoimaloiden infraääni [‘Infrasound from wind power’]. In *Proceedings of the Acoustical Society of Finland, Espoo 24.–25.08.2017, (Akustiikkapäivät 2017)*, Espoo, August 2017. Acoustical Society of Finland.
- [7] Panu P. Maijala, Toni Heittola, and Tuomas Virtanen. Ympäristömelun mittaaminen käyttäen automaattista lähteiden tunnistusta [‘Environmental Noise Monitoring Using Automatic Source Classification’]. In *Proceedings of the Acoustical Society of Finland, Oulu 28.–29.10.2019, (Akustiikkapäivät 2019)*, pages 196–206, Oulu, October 2019. Acoustical Society of Finland. ISBN ISBN 978-952-60-3784-4.
- [8] Mikko Kylliäinen, Panu P. Maijala, Yuan Lihong, and Veli-Matti Järvenpää. Education of Acoustics at Tampere University of Technology. In *Proceedings of Baltic-Nordic Acoustical Meeting BNAM 2014, Tallinn, 2–4 June, 2014*, number 50, pages 1–7, June 2014.
- [9] Panu P. Maijala. Järjestelmä äänen etenemisen mittaamiseen [‘System for Measurements of Sound Propagation’]. In *Proceedings of the Acoustical Society of Finland, Kuopio 26.–27.09.2005, (Akustiikkapäivät 2005)*, pages 129–134, Kuopio, 2005. Acoustical Society of Finland.
- [10] Jarno Kokkonen, Olli Kontkanen, and Panu P. Maijala. CNOSSOS-EU Noise Model Implementation in Finland. In *Baltic-Nordic Acoustic Meeting 2016, Stockholm, Sweden, June 19–22 (BNAM 2016)*, number 38, pages 1–7, Stockholm, Sweden, June 2016. Nordic Acoustic Association (NAA).
- [11] Panu P. Maijala, Zhao Shuyang, Toni Heittola, and Tuomas Virtanen. Environmental Noise Monitoring Using Source Classification in Sensors. *Applied Acoustics*, 129(1):258–267, 2018. ISSN 0003-682X. URL <https://doi.org/10.1016/j.apacoust.2017.08.006>.
- [12] Panu P. Maijala and Lasse Lamula. Selvitys merentutkimusaluksen akustisista kartoituslaitteistoista [‘A study of acoustical survey equipment for a marine research vessel’]. Public research report VTT-CR-03723-14, Technical Research Centre of Finland (VTT), December 2015.
- [13] Vesa Välimäki, Panu P. Maijala, and Otto Puomio. Akustiikka Wikipediassa [‘Acoustics in Wikipedia’]. In *Proceedings of the Acoustical Society of Finland, Oulu 28.–29.10.2019, (Akustiikkapäivät 2019)*, pages 146–152,

Oulu, October 2019. Acoustical Society of Finland. ISBN ISBN 978-952-60-3784-4.

- [14] Panu P. Maijala. Atmosaku Project WWW Pages. www, 2004. URL <http://akusti.vtt.fi>. (Accessed on 27 June 2013).
- [15] Mervi Karu and Panu P. Maijala. Automaattinen ilmakehän akustiikan mitausjärjestelmä [‘Automatic Measurement System for Atmospheric Acoustics’]. Public research report TUO56-041263, Technical Research Centre of Finland (VTT), 2004.
- [16] Panu P. Maijala. Äänenlaatuvertailu [‘Sound Quality Comparison’]. Confidential research report TUO56-043671, Technical Research Centre of Finland (VTT), 2004.
- [17] Panu P. Maijala. *On Sound Radiated by a Fighter*, volume 74 of Laboratory of acoustics and audio signal processing publication series, pages 1–26. Laboratory of acoustics and audio signal processing, 2004. ISBN 951-22-7085-4.
- [18] Panu P. Maijala. ATMOSAKU-ohjelmistomodulin rajapintojen kuvaus [‘The Programming Interface of the ATMOSAKU Software’]. Public research report TUO56-041293, Technical Research Centre of Finland (VTT), 2004.
- [19] Panu P. Maijala. ATMOSAKU-ohjelmistomoduli [‘The ATMOSAKU Software Module’]. Public research report TUO56-041300, Technical Research Centre of Finland (VTT), 2004.
- [20] Panu P. Maijala, Velipekka Mellin, Esa Nousiainen, and Kari Saarinen. Akustisen energian kytkeytyminen rakenteisiin [‘Coupling of Acoustic Energy with Buildings’]. Technical Report TUO56-033409, Technical Research Centre of Finland (VTT), 2003.
- [21] Panu P. Maijala and Ossi Ojanen. Long-Term Measurements of Sound Propagation in Finland (invited paper). In *Proceedings of the International Conference on Noise Control Engineering, Honolulu, Hawaii, Dec. 3–6 (Inter-noise 2006)*, number 326 in INTER-NOISE Series, pages 1–10, Honolulu, Hawaii, USA, December 2006. INCE.

- [22] Panu P. Maijala, Jarno Kokkonen, and Olli Kontkanen. CNOSSOS-EU Sensitivity to Meteorological and to Some Road Initial Value Changes (invited paper). In *Proceedings of the International Conference on Noise Control Engineering, Hamburg, Germany, Aug. 21–24 (Inter-noise 2016)*, number 880, pages 1367–1378, Hamburg, Germany, August 2016. INCE.
- [23] Panu P. Maijala. Kuituoptisen hydrofonin mittaukset [‘Measurements of a Fiber Optic Hydrophone’]. Confidential research report TUO56-043648, Technical Research Centre of Finland (VTT), 2003.
- [24] Panu P. Maijala. Mallinnus ja akustinen mittaus [‘Modeling and Acoustical Measurements’]. Public research report BTUO56-661041, Technical Research Centre of Finland (VTT), 2002.
- [25] Panu P. Maijala. Virtausäänen syntyilmiöitä [‘Flow Induced Sound Phenomena’]. Public research report BTUO56-661040, Technical Research Centre of Finland (VTT), 2002.
- [26] Panu P. Maijala. Kanavien akustiikkaa [‘Acoustics in Ducts’]. Public research report BTUO56-661039, Technical Research Centre of Finland (VTT), 2002.
- [27] Panu P. Maijala. Maalin korkeuden vaikutus havaitsemisetäisyyteen, laboratoriomittaus [‘The Effect of the Height of a Target on the Detection Distance, Laboratory Measurement’]. Technical Report TUO56-021767, Technical Research Centre of Finland (VTT), 2002.
- [28] Panu P. Maijala. *Measurements of Atmospheric Sound Propagation Near the Ground*, volume 63 of Laboratory of acoustics and audio signal processing publication series, pages 65–84. Laboratory of acoustics and audio signal processing, 2002. ISBN 951-22-5943-5.
- [29] Panu P. Maijala. *A Concept to Model Environmental Noise Annoyance*, pages 1–25. Laboratory of acoustics and audio signal processing publication series. Laboratory of acoustics and audio signal processing, May 2009.
- [30] Panu P. Maijala and Velipekka Mellin. Maalin korkeuden vaikutus havaitsemisetäisyyteen, mallinnustarkastelu [‘The Effect of the Height of a Target on the Detection Distance, a Modelling Approach’]. Technical Report TUR C067, Technical Research Centre of Finland (VTT), 2002.

- [31] Panu P. Maijala, Kari Saarinen, and Velipekka Mellin. Äänen leviämistä mallintavan ohjelmiston käyttöönotto ja evaluointi [‘Deployment and Evaluation of a Piece of Sound Propagation Modeling Software’]. Technical Report TUR C064, Technical Research Centre of Finland (VTT), 2001.
- [32] Panu P. Maijala. Akustisten antureiden tuulisuojat [‘Wind Screens of Acoustic Sensors’]. Technical Report TUR C060, Technical Research Centre of Finland (VTT), 2001.
- [33] Matti Karjalainen, Veijo Ikonen, Poju Antsalu, Panu P. Maijala, Lauri Savioja, Antti Suutala, and Seppo Pohjolainen. Comparison of Numerical Simulation Models and Measured Low-Frequency Behavior of Loudspeaker Enclosures. *J. Audio Eng. Soc.*, 49(12):1148–1166, December 2001.
- [34] Antti O. Niskanen, Juha Hassel, Miikka Tikander, Panu P. Maijala, Leif Grönberg, and Panu Helistö. Suspended Metal Wire Array as a Thermoacoustic Sound Source. *Applied Physics Letter*, 95(16):163102–1–3, 2009. ISSN 00036951. doi: 10.1063/1.3249770. URL <https://doi.org/10.1063/1.3249770>.
- [35] Jukka Leikkala, Mika Paajanen, Risto Poramo, and Panu P. Maijala. Laajapinta-alainen akustinen sensori [‘An Acoustic Sensor with Large Surface Area’]. Technical report, Technical Research Centre of Finland (VTT), 2000.
- [36] Panu P. Maijala. Akustiset anturit. Teoria, toimintaperiaatteet, ominaisuudet, kaupalliset anturit ja varusteet sekä valinta käyttötarkoituksen mukaan [‘Acoustical Sensors: Theory, Principles of Operation, Properties, Commercial Sensors and Accessories, and Selection According to Use’]. Technical Report TUR C030/1, Technical Research Centre of Finland (VTT), 2000.
- [37] Panu P. Maijala. *Factors on Perception of Simultaneous Sound Sources*, volume 52 of Laboratory of acoustics and audio signal processing publication series, pages 155–176. Laboratory of acoustics and audio signal processing, 1999. ISBN 951-22-4507-8.
- [38] Hanna Järveläinen, Panu P. Maijala, and Matti Karjalainen. Noise Annoyance Study in the Cabin of Mobile Work Machines. In *Proceedings of the Nordic Acoustical Meeting (NAM’98)*, pages 185–189, 1998.

- [39] Matti Karjalainen, Veijo Ikonen, Antti Järvinen, Panu P. Maijala, Lauri Savioja, Antti Suutala, Juha Backman, and Seppo Pohjolainen. Comparison of Numerical Simulation Models and Measured Low-Frequency Behavior of a Loudspeaker. In *Proceedings of the 104th AES Convention*, number 4722, pages 1–34. AES, May 1998.
- [40] Hanna Järveläinen, Matti Karjalainen, Panu P. Maijala, Kari Saarinen, and Jukka Tanttari. *Työkoneiden ohjaamomelun häiritsevyys ja sen vähentäminen* [‘Reducing the Noise Annoyance in Mobile Work Machines’], volume 47. Laboratory of acoustics and audio signal processing, 1998. ISBN 951-22-3967-1.
- [41] Panu P. Maijala. Parempia binauraalisia äänityksiä tosipäällä? [‘Better Binaural Recordings Using the Real Human Head?’]. In *Proceedings of the Acoustical Society of Finland, Espoo 8.–9.10.1997, (Akustiikkapäivät 1997)*, pages 12–24, Espoo, Finland, October 1997. Akustinen Seura.
- [42] Hannu Nykänen, Marko Antila, Panu P. Maijala, and Seppo Uosukainen. Psykoakustisen kokemuksen evaluointi ja muokkaaminen ohjaamo- ja matkustamoympäristössä [‘Evaluation and Modification of Psychoacoustic Experience in Cabins’]. In *Proceedings of the Acoustical Society of Finland, Tampere 11.–12.05.2011, (Akustiikkapäivät 2011)*, pages 1–6, Tampere, Finland, May 2011. Akustinen Seura.
- [43] Antti Järvinen and Panu P. Maijala. On the Use of Real Head Recordings in Product Sound Design. In *Proceedings of the International Conference on Noise Control Engineering, Budapest, Hungary, Aug. 25–27, (Inter-noise 1997)*, volume 2, pages 1143–1146, Budapest, Hungary, August 1997. INCE.
- [44] Olli Kontkanen, Jarno Kokkonen, and Panu P. Maijala. CNOSSOS-EU Sensitivity to Meteorological Value Changes. In *Baltic-Nordic Acoustic Meeting 2016, Stockholm, Sweden, June 19–22 (BNAM 2016)*, number 37, pages 1–8, Stockholm, Sweden, June 2016. Nordic Acoustic Association (NAA).
- [45] Panu P. Maijala. Excess Attenuation and Meteorological Data in a Long Term Measurement. In *Proceedings of the International Conference on Noise Control Engineering, Tampere, Finland, 30 May – 1 June, (Euronoise 2006)*, number SS20-392 in euro-noise series, pages 1–6, Tampere, Finland, May 2006. EAA.

- [46] Panu P. Maijala. A Set-up for Long Term Sound Propagation Measurements. In *Proceedings of the International Congress on Noise Control Engineering, Tampere, Finland, 30 May – 1 June, (Euronoise 2006)*, number SS20-390 in euro-noise series, pages 1–6, Tampere, Finland, May 2006. EAA.
- [47] Panu P. Maijala. ATMOSAKU-ohjelmiston toiminnallinen määrittely [‘Functional Specification of the ATMOSAKU Software’]. Public research report TUO56-051364, Technical Research Centre of Finland (VTT), 2005.
- [48] Panu P. Maijala. Tutkimussuunnitelma Sodankylän koasetelmaa varten [‘Research Plan for Sodankylä Trials’]. Public research report TUO56-031187, Technical Research Centre of Finland (VTT), 2003.
- [49] Panu P. Maijala. Sodankylän mittausjärjestelyt [‘Measurement Set-up for Sodankylä Trials’]. Public research report 201/IVE-2003, Technical Research Centre of Finland (VTT), August 2003.
- [50] Panu P. Maijala. *Binauraalinen äänitys ja toisto kuuntelukokeita varten* [‘Binaural Recording and Authentic Reproduction’], volume 41, pages 285–306. Laboratory of acoustics and audio signal processing, 1996. ISBN 951-22-3309-7.
- [51] Panu P. Maijala. Better Binaural Recordings Using the Real Human Head. In *Proceedings of the International Conference on Noise Control Engineering, Budapest, Hungary, Aug. 25–27, (Inter-noise 1997)*, volume 2, pages 1135–1138, Budapest, Hungary, August 1997. INCE.
- [52] Panu P. Maijala. Binauraalinen äänenlaadun arviointijärjestelmä [‘Binaural System for Evaluation of Sound Quality’]. Master’s thesis, Helsinki University of Technology, Espoo, Finland, 1997. (published in 1999).
- [53] Panu P. Maijala. Evaluation of Binaural Technology in Hydro-Acoustic Surveillance Systems. Public research report A/99/6, MATINE, Helsinki, 1999.
- [54] Panu P. Maijala. Virtausopista [‘Some Words about Flow Doctrine’]. Public research report BTUO56-661042, Technical Research Centre of Finland (VTT), 2002.

- [55] Raimo Eurasto and Panu P. Maijala. Environmental Noise and Weather. Confidential research report VTT-R-08304-07, Technical Research Centre of Finland (VTT), 2007.
- [56] Panu P. Maijala. ATMOSAKU-ohjelmisto [‘The ATMOSAKU Software’]. Public research report VTT-R-02565-06, Technical Research Centre of Finland (VTT), 2007.
- [57] Panu P. Maijala. Enhancement of Sound Quality in Public Announcement Systems. Confidential research report VTT-R-01403-12, VTT Technical Research Centre of Finland, 2012.
- [58] Panu P. Maijala. Noise Propagation in the Atmosphere from Wind Power Plants. Public research report VTT-R-00030-11, VTT Technical Research Centre of Finland, January 2011.
- [59] Panu P. Maijala. Hylsyn virheiden vibroakustinen detektointi [‘Vibroacoustic Detection of Defects in Ammunition Shells’]. Confidential research report VTT-R-10145-10, Teknologian tutkimuskeskus VTT, December 2010.
- [60] Panu P. Maijala and Seppo Uosukainen. Virtauksen vaikutus äänenvaimentimien äänitehoon ja suuntaavuuteen [‘Impact of Flow to Sound Power and Directivity of Silencers’]. Confidential research report VTT-R-10105-07, Technical Research Centre of Finland (VTT), 2007.
- [61] Panu P. Maijala. Criterion to Select Meteorological Factors to Evaluate Uncertainties in Sound Propagation. *The Journal of the Acoustical Society of America*, 123(5):3149–3149, June 2008. ISSN 0001-4966. doi: 10.1121/1.2933156. URL <https://doi.org/10.1121/1.2933156>.
- [62] Johannes Hyrynen and Panu P. Maijala. Description and Justification of Selected Case Ports Turku and Dublin. Technical Report EFFORTS project report D.2.4.1., Technical Research Centre of Finland (VTT), December 2007.
- [63] Johannes Hyrynen, Panu P. Maijala, and Denis Siponen. Target Setting: Implementation Plan for Emission Control Based on Annoyance Evaluation. Technical Report EFFORTS project report D.2.4.4., VTT Technical Research Centre of Finland, October 2009.
- [64] Johannes Hyrynen, Velipekka Mellin, and Panu P. Maijala. Source Ranking Data (Sound Power Level & Annoyance Data). Technical Report

- EFFORTS project report D.2.4.3., Technical Research Centre of Finland (VTT), November 2008.
- [65] Panu P. Maijala, Lasse Lamula, Johannes Hyrynen, and Denis Siponen. Setup Plan of Facilities for Annoyance Evaluation. Technical Report EFFORTS project report D.2.4.2., Technical Research Centre of Finland (VTT), February 2008.
- [66] Panu P. Maijala and Topi Kaaresoja. Herra Keino Suuntonen [‘Mr Dave Direction, the Listening and Turning Head’]. Technical report, Helsinki University of Technology, Laboratory of Acoustics and Audio Signal Processing, May 1996.
- [67] Ari Virtanen, Jukka Laitinen, Pertti Peussa, Teppo Kivento, Aimo Taipale, Seppo Horsmanheimo, Paul Kemppi, Lotta Tuomimäki, Panu P. Maijala, Esko Strömmer, and Janne Aikio. Väyläselvitys [‘Review of the Vehicle Bus Technologies’]. Technical Report VTT-CR-057793-13, Technical Research Centre of Finland (VTT), 2013.
- [68] Panu P. Maijala. *A Measurement-based Statistical Model to Evaluate Uncertainty in Long-range Noise Assessments*. Doctoral dissertation, Tampere University of Technology, P.O. Box 1000, FI-02044 VTT, Finland, December 2013. URL <http://URN.fi/URN:ISBN:978-951-38-8110-8>.
- [69] Panu P. Maijala. Same infrasound levels near wind turbines than in urban environment? In *Proceedings of Baltic-Nordic Acoustical Meeting BNAM 2018, Reykjavik, 15–18 April, 2018*, pages 1–6, April 2018.
- [70] Panu P. Maijala. Junan pyörävaimentimen laboratoriomittaus [‘Laboratory Measurement of a Train Wheel Attenuator’]. Confidential research report VTT-CR-03302-14, Technical Research Centre of Finland (VTT), June 2014.
- [71] Panu P. Maijala. Ahveniston moottoriradan melun leviämisen ominaispiirteitä [‘Noise Propagation Characteristics of the Ahvenisto Race Circuit’]. Public research report VTT-CR-03723-14, Technical Research Centre of Finland (VTT), August 2014.

- [72] Tomi Lindroos, Hannu Nykänen, Lasse Lamula, Marjaana Karhu, Seppo Uosukainen, Heikki Parviainen, Erin Komi, Panu P. Maijala, Heikki Iso-moisio, and Ilkka Aaltio. Advanced functional solutions for Noise and Vibration reduction of machinery. Technical Report VTT-R-02256-14, VTT Technical Research Centre of Finland, VTT PL 1000, 02044 VTT, 2010.
- [73] Panu P. Maijala. Varmuutta ympäristömelun kartoitusten epävarmuuksiin [‘Certainty to the Uncertainties in Environmental Noise Mapping’]. *Ympäristö ja Terveys-lehti*, 46(2):62–67, 2015.
- [74] Panu P. Maijala, Ilmari Kurki, Lari Vainio, Satu Pakarinen, Crista Kuuramo, Kristian Lukander, Jussi Virkkala, Kaisa Tiippana, Emma A. Stickler, and Markku Sainio. Annoyance, perception, and physiological effects of wind turbine infrasound. *The Journal of the Acoustical Society of America*, 149(4):2238–2248, April 2021. doi: 10.1121/10.0003509. URL <https://doi.org/10.1121/10.0003509>.
- [75] Panu P. Maijala. Kopterin äänen karakterisointi ja soveltuvuus ympäristömelumittauksiin [‘Drone noise characterization and suitability for environmental noise measurements’]. Confidential research report VTT-CR-03385-17, Teknologian tutkimuskeskus VTT, June 2017.
- [76] Panu P. Maijala. International patent application, PCT/FI2018/050759, Enclosure for a sound level meter and a sound level meter, May 2019.
- [77] Timo Lanki, Anu Turunen, Panu P. Maijala, Marja Heinonen-Guzejev, Sami Kännälä, Tim Toivo, Tommi Toivonen, Jukka Ylikoski, and Tarja Yli-Tuomi. Tuulivoimaloiden tuottaman äänen vaikutukset terveyteen [‘Health effects of sound produced by wind turbines’]. Technical Report 28, Työ- ja elinkeinoministeriö, jun 2017. URL <http://urn.fi/URN:ISBN:978-952-327-229-3>.