Efren Fernandez Grande - DTU Orbit (30/03/2019)

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Department of Electrical Engineering - Associate Professor
Acoustic Technology

Research outputs:

Volumetric reconstruction of acoustic energy flows in a reverberation room
Research output: Research - peer-review › Journal article – Annual report year: 2019

A coupler-based calibration method for ear-probe microphones
Research output: Research - peer-review › Journal article – Annual report year: 2018

Active room compensation for sound reinforcement using sound field separation techniques
Research output: Research - peer-review › Journal article – Annual report year: 2018

A wavenumber approach to quantifying nonuniform sound incidence in measurements of sound absorption in the reverberation chamber
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

A wavenumber approach to quantifying the isotropy of the sound field in reverberant spaces
Research output: Research - peer-review › Journal article – Annual report year: 2018

Characterization of acoustic scattering from objects via near-field measurements
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Compressive acoustic holography with block-sparse regularization
Research output: Research - peer-review › Journal article – Annual report year: 2018

Modal reconstruction of the sound field in a room at low frequencies
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2018

Noise Quantification with Beamforming Deconvolution: Effects of Regularization and Boundary Conditions
Research output: Research - peer-review › Paper – Annual report year: 2018

On the Influence of Transfer Function Noise on Low Frequency Pressure Matching for Sound Zones
Reconstruction of the Sound Field in a Room Based on Wavenumber Processing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Reconstruction of the sound field in a room using compressive sensing
Research output: Research - peer-review › Journal article – Annual report year: 2018

Volumetric sampling of the sound field in a room
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

An adaptive, data driven sound field control strategy for outdoor concerts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

A sparse equivalent source method for near-field acoustic holography
Research output: Research - peer-review › Journal article – Annual report year: 2017

A total generalized variation approach for near-field acoustic holography
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Compensating for evanescent modes and estimating characteristic impedance in waveguide acoustic impedance measurements
Research output: Research - peer-review › Journal article – Annual report year: 2017

Design of Passive Acoustic Wave Shaping Devices and Their Experimental Validation
Christiansen, R. E., Sigmund, O. & Fernandez Grande, E. 2017 1 p.
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Estimation of surface impedance at oblique incidence based on sparse array processing
Research output: Research - peer-review › Journal article – Annual report year: 2017

Estimation of surface impedance using different types of microphone arrays
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2017

Experimental characterization of the Green’s function in a room using sparse reconstruction principles
Research output: Research - peer-review › Journal article – Annual report year: 2017

Incorporating evanescent modes and flow losses into reference impedances in acoustic Thévenin calibration
Research output: Research - peer-review › Journal article – Annual report year: 2017
Block-sparse beamforming for spatially extended sources in a Bayesian formulation
Research output: Research - peer-review › Journal article – Annual report year: 2016

Compressive sensing with a spherical microphone array
Fernandez Grande, E. & Xenaki, A. 2016 In : Journal of the Acoustical Society of America. 139, 2, 5 p., EL45
Research output: Research - peer-review › Journal article – Annual report year: 2016

Decay curves in coupled, reverberant spaces
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Designing an array for performing Near-field Acoustic Holography with a small number of p-u probes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Design of passive directional acoustic devices using Topology Optimization - from method to experimental validation
Research output: Research - peer-review › Journal article – Annual report year: 2016

Impedance estimation of a finite absorber based on spherical array measurements
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

In situ measurements of the oblique incidence sound absorption coefficient for finite sized absorbers
Research output: Research - peer-review › Journal article – Annual report year: 2016

Near-field acoustic imaging based on Laplacian sparsity
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Sound field reconstruction using a spherical microphone array.
Research output: Research - peer-review › Journal article – Annual report year: 2016

Spatial resolution limits for the localization of noise sources using direct sound mapping
Research output: Research - peer-review › Journal article – Annual report year: 2016

Characterization of diffusivity based on spherical array processing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Experimental validation of a topology optimized acoustic cavity
Research output: Research - peer-review › Journal article – Annual report year: 2015
Finite surface method to measure the sound absorption coefficient at oblique incidence
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Improving the efficiency of deconvolution algorithms for sound source localization
Research output: Research - peer-review › Journal article – Annual report year: 2015

Localization of incoherent multiple sources using a three-dimensional sound intensity array
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Sparse acoustic imaging with a spherical array
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Sparse DOA estimation with polynomial rooting
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

The equivalent source method as a sparse signal reconstruction
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Conservation of power of the supersonic acoustic intensity
Research output: Research - peer-review › Letter – Annual report year: 2014

Enhancing the beamforming map of spherical arrays at low frequencies using acoustic holography
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Reconstruction of sound fields with a spherical microphone array
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

A novel deconvolution beamforming algorithm for virtual phased arrays
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Holographic reconstruction of sound fields based on the acousto-optic effect
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Reconstruction of arbitrary sound fields with a rigid-sphere microphone array
Research output: Research - peer-review › Journal article – Annual report year: 2013
Regularised reconstruction of sound fields with a spherical microphone array
Research output: Research - peer-review › Conference article – Annual report year: 2013

Three-dimensional reconstruction of sound fields based on the acousto-optic effect.
Research output: Research - peer-review › Journal article – Annual report year: 2013

Towards an enhanced performance of uniform circular arrays at low frequencies
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Direct formulation of the supersonic acoustic intensity in space domain
Research output: Research - peer-review › Journal article – Annual report year: 2012

Improving the resolution of three-dimensional acoustic imaging with planar phased arrays
Research output: Research - peer-review › Journal article – Annual report year: 2012

Investigating the use of the acousto-optic effect for acoustic holography
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Near-field acoustic holography with sound pressure and particle velocity measurements
Fernandez Grande, E. 2012 Technical University of Denmark, Department of Electrical Engineering. 200 p.
Research output: Research › Ph.D. thesis – Annual report year: 2013

Sound field separation with sound pressure and particle velocity measurements
Research output: Research - peer-review › Journal article – Annual report year: 2012

Beamforming with a circular array of microphones mounted on a rigid sphere (L)
Research output: Research - peer-review › Journal article – Annual report year: 2011

Near field acoustic holography with microphones on a rigid sphere
Research output: Research - peer-review › Journal article – Annual report year: 2011

Sound field separation with a double layer velocity transducer array (L)
Fernandez Grande, E. & Jacobsen, F. 2011 In : Journal of the Acoustical Society of America. 130, 1, p. 5-8
Research output: Research - peer-review › Journal article – Annual report year: 2011

Supersonic acoustic intensity with statistically optimized near-field acoustic holography
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Beamforming with a circular microphone array for localization of environmental noise sources
Research output: Research - peer-review › Journal article – Annual report year: 2010
Beamforming with a circular microphone array for localization of environmental sources of noise.
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Improving the resolution of beamforming measurements on wind turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Separation of radiated sound field components from waves scattered by a source under non-anechoic conditions.
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Patch near-field acoustic holography: The influence of acoustic contributions from outside the source
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Near field acoustic holography with microphones mounted on a rigid sphere
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Sound Radiation from a Loudspeaker Cabinet using the Boundary Element Method
Research output: Research › Report – Annual report year: 2008

Spherical near field acoustic holography with microphones on a rigid sphere
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Spherical near field acoustic holography with microphones on a rigid sphere: Abstract of paper
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2008

Projects:

Sound Field Analysis and Microphone Array in Rooms
Hahmann, M., Fernandez Grande, E. & Agerkvist, F. T.
01/02/2019 → 31/01/2022
Project: PhD

Acoustic Array Processing and Sound Field Analysis in Rooms
Eksternt finansieret virksomhed
01/07/2018 → 30/06/2021
Project: PhD

Real time sound field control for outdoor concerts - silent zones, adaptation and objective-subjective performance
Plewe, D., Agerkvist, F. T., Brunskog, J. & Fernandez Grande, E.
Samfinansieret - Andet
01/05/2017 → 27/08/2020
Project: PhD
Aero-acoustic wind tunnel tests
Lylloff, O. A., Fischer, A., Bak, C. & Fernandez Grande, E.
Technical University of Denmark
01/02/2017 → 31/01/2020
Project: PhD

Outdoor Sound Propagation and Monitoring for Sound Field Control Applications
Caviedes Nozal, D., Brunskog, J., Agerkvist, F. T. & Fernandez Grande, E.
Samfinansieret - Andet
15/12/2016 → 14/12/2019
Project: PhD

Sound field control for outdoor concerts
Heuchel, F. M., Agerkvist, F. T., Brunskog, J. & Fernandez Grande, E.
Samfinansieret - Andet
15/12/2016 → 14/12/2019
Project: PhD

Impedance calibration and measurement techniques in hearing diagnostics
Nørgaard, K. R., Fernandez Grande, E. & Laugesen, S.
Industrial PhD
01/12/2016 → 30/11/2019
Project: PhD

Characterization of acoustic properties of surfaces based on spatio-temporal information
Technical University of Denmark
15/12/2015 → 14/12/2018
Project: PhD

Source identification with acoustic array technology based on new acoustic transducers
Fernandez Grande, E., Jacobsen, F., Juhl, P. M., Svensson, P. & Williams, E. G.
Technical University of Denmark
15/01/2009 → 21/08/2012
Project: PhD

Activities:

The Poul la Cour Tunnel: A new aerodynamic and aeroacoustic wind tunnel dedicated to wind energy
Bak, C. (Other), Fischer, A. (Other), Mikkelsen, R. F. (Other), Olsen, A. S. (Other), Gaunaa, M. (Other), Fernandez Grande, E. (Other), Skrzypinski, W. R. (Other)
28 Nov 2017 → 30 Nov 2017
Activity: Talks and presentations › Conference presentations

Test possibilities in the Poul la Cour Tunnel
Bak, C. (Speaker), Fischer, A. (Other), Mikkelsen, R. F. (Other), Olsen, A. S. (Other), Gaunaa, M. (Other), Skrzypinski, W. R. (Other), Fernandez Grande, E. (Other)
26 Jun 2017
Activity: Talks and presentations › Conference presentations