

Date:

22 and 23 February 2012

Location:

Lecture Theatre of the Institute for Fluid Mechanics and Technical Acoustics (Institut für Strömungsmechanik und Technische Akustik, ISTA), Technical University of Berlin, Einsteinufer 25, 10587 Berlin, Germany

Registration Fee:

- 400,- Euro
- 300,- Euro for registration by 30 November 2011
- 75,- Euro for speakers / employees of TU Berlin (Institute of Fluid Mechanics and Technical Acoustics), DLR (Institute of Propulsion Technology), GFaI
- *Free admission for students*
- 40,- Euro for the social event (dinner)

Registration:

online registration at www.bebec.eu

Lectures:

20 min, 5 min for discussion

Submission of Abstract and/or Paper:

Please use the template and guidelines provided on www.bebec.eu

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Contact:

info@bebec.eu

31 October 2011

registration for presentation ends; documents to be handed in by this date: title and abstract (template will be provided on the homepage)

15 November 2011

Selection and confirmation of presentations and registrations

30 November 2011

Early bird registration ends

10 February 2012

Submission of papers for publication (template will be provided on the homepage)

4th BeBeC on 22 and 23 February 2012

Organization

GFaI

Society for the Promotion of Applied Computer Sciences

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Berlin Beamforming Conference

22 and 23 February 2012



Since 2006 the Berlin Beamforming Conference (BeBeC) has taken place every two years during the second half of February. The next BeBeC is scheduled for 22 and 23 of February 2012.

The objective of the conference is to improve the scientific foundations and to contribute to further developments of acoustic beamforming techniques. Moreover, the conference shall provide a platform for practical results from a wide range of concrete implementations.

Invited are all those who

- do research in beamforming with microphone arrays (university, academia, research institutions),
- develop and run own beamforming systems,
- apply beamforming systems in practice,
- develop imaging techniques or determine other variables that characterize the soundfield (e.g. intensities, sound particle velocity) by using microphone arrays,
- develop methods for quantitative analysis of source intensity based on microphone arrays.

Also invited are of course those who are interested in the current state of the various beamforming methods.



Over the past years, beamforming has become an accepted method in technical acoustics. There is an ever increasing number of publications in this field. Beamforming is used in the highly complex field of aero acoustics, or for sound localization in technical plants and machinery as well as in the automotive sector. A number of companies are now offering commercial beamforming systems. At the same time, there exists a high variety of implementations in the academic sector as well as tailor-made solutions for services and special applications.

Nevertheless, there are still problems waiting to be solved. As an example, the values indicated in the sound level maps are only exact in the case of acoustic monopole sources with a sufficiently large separation. The dynamic ranges of the sound pressure levels calculated with the classical beamforming algorithms are generally low without additional signal processing. Dependent on the array used, maximum values of about 15 dB (in most practical applications even much lower values) are reached. The aliasing patterns can only be distinguished from real sources with difficulties. Deconvolution of the acoustic maps has improved the situation but is still computationally very time consuming. Several research teams are working on these problems.

The BeBeC shall provide these teams with a forum to present their work and open it up for discussion. Both theoretical and practical work will receive a platform, independent from any defined beamforming system. Competing institutions and companies are encouraged to participate. Comparisons with other acoustic methods are welcome.

The Berlin Beamforming Conference shall give an impulse to the further development and practical application of beamforming systems.

Topics (suggestions):

- Theoretical basis and further development of the method (time and frequency domains)
- Aliasing suppression
- Improvement of dB contrast
- Improvement of source separation
- Improvement of qualitative results
- Improvement of quantitative results by inverse methods
- Interrelations between other methods
- Array development, comparisons, array patterns etc., angle and frequency dependency
- Practical application of systems
- Relevance to industrial application

