

## NEWSLETTER 2018

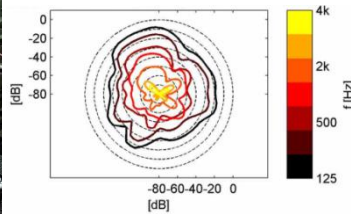
# RESEARCH ACTIVITIES

### International project “Analysis, Creation, and Teaching ORchestration”

The ACTOR Partnership proposes to enhance attention to timbre and orchestration by bringing its musical use to the forefront of scholarship, practice, and public awareness with world-class artists, humanists, and scientists. This partnership links North American and European orchestration practice and pedagogy, stimulates the development of new creativity-enhancing digital tools for learning, creating, and studying orchestration practice and sensitizes young audiences to the wonders and complexities of high-quality music. Current work at ETI includes analysis & synthesis of blending of orchestral instrument groups as well as research on the interaction between musicians and performance spaces. Information at <https://www.actorproject.org>

### Sound radiation characteristics of musical instruments

We measure static and dynamic radiation characteristics of musical instruments using various methods. Time resolved sound radiation polar plots of a broad variety of instruments have been obtained from measurements with a ring-shaped microphone array.



Set-up for instrument directivity measurement and results (left/centre); set-up for automatised measurement of violin directivity on a 3D turntable (right).

An application: <http://amise.netzwerk-musikhochschulen.de>

### DFG-funded project “Technologies of singing”

Our work package within this joint project with the Musicology seminar aims at investigating the impact of early recording devices on the singing performance and voice quality of singers. The project has started in 2016 and will be funded for 3 years.



DFG team members (from right to left): Prof. Dr. R. Grotjahn, Dr. T. Hähnel, L. Mersch, D. Habasinska, T.A. Weege, Dr. K. Martensen, Prof. Dr. M. Kob  
Not on picture: P. Kreisig, B. Bolles, S.V. Amengual Garí  
Project webpage: <http://www.hfm-detmold.de/tds>

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# RECENT PUBLICATIONS

- M. Kob: Experimental Approaches to the Study of Damping in Musical Instruments. In: Studies in Musical Acoustics and Psychoacoustics, Springer 2017, 187-200
- M. Kob: Optimierte Raumakustik für künstlerischen, pädagogischen und diagnostischen Stimmgebrauch. In: Leipziger Symposien zur Kinder- und Jugendstimme, Logos 2017, 115-130
- S.V. Amengual Garí, M. Kob, T. Lokki: Investigations on stage acoustic preferences of solo trumpet players using virtual acoustics. Proceedings of the 14<sup>th</sup> Sound and Music Computing Conference 2017, 167-174
- S.V. Amengual Garí, M. Kob: Investigating the impact of a music stand on stage using spatial impulse responses. Convention paper 9746, presented at the 142nd AES Convention in Berlin 2017, 7 pages
- S.V. Amengual Garí, W. Lachenmayr, E. Mommertz: Spatial analysis and auralization of room acoustics using a tetrahedral microphone. J. Acoustical Society of America, vol. 141 (4) 2017, EL369-EL374
- W. Lachenmayr: Perception and Quantification of Reverberation in Concert Venues. Dissertation, Detmold University of Music 2017
- L. Tronchin, M. Kob, C. Guarnaccia: Spatial Information on Voice Generation from a Multi-Channel Electroglottograph. Applied Sciences (8) 2018, 1560-1569
- M. Kob, S.V. Amengual Garí, B.A. Bolles, D.M. Ritter, P. Pirch: Influence of Early Recording and Playing Devices on Voice Sounds: Modification of singing voice formants. In: Fortschritte der Akustik – DAGA 2018, Deutsche Gesellschaft für Akustik e.V. (DEGA), Berlin 2018, 1703-1706
- T.A. Weege, D. Habasińska, M. Kob: Influence of Early Recording and Playing Devices on Musical Sound: FRF Measurements of Horn, Soundbox and Tonearm. In: Fortschritte der Akustik – DAGA 2018, Deutsche Gesellschaft für Akustik e.V. (DEGA), Berlin 2018, 1707-1710
- M. Kob, S.V. Amengual Garí, Z. Schärer Kalkandjiev: Reciprocal effects of performance spaces on musicians. In: The Technology of Binaural Understanding, Springer 2019, in print

More publications and up-to-date information available at  
<http://www.hfm-detmold.de/die-hochschule/forschung>  
<http://www.eti.hfm-detmold.de/forschung>

### Contact

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### Workgroup “Music Acoustics”

Dr.-Ing. Malte Kob, professor, team leader  
Dr. Timo Grothe, postdoctoral researcher  
Tobias Andreas Weege, M.Sc., researcher



Trumpet player performing in a virtual acoustic environment