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## Curriculum vitae: **Andreas Heinecke**

### Contact information

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### Educational background

Dec 2012	PhD in Mathematics University of Missouri-Columbia, USA
Oct 2007	Diplom in Mathematics Technische Universität Dresden, Germany
Sep 2005–Feb 2006	Socrates-Erasmus Fellowship National Technical University of Athens, Greece

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### Academic positions

2015–present	Assistant Professor of Science (Mathematics) Yale-NUS College, Singapore
2016–present	Assistant Professor of Mathematics (Courtesy Appointment) Department of Mathematics National University of Singapore, Singapore
2013–2015	Research Fellow Department of Mathematics and Centre for Wavelets and Information Processing National University of Singapore, Singapore

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### Research interests

Harmonic and functional analysis, frame theory, in particular wavelet and Gabor frames, time-frequency analysis, sparse approximation, optimization, applications to data analysis.

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## Journal publications

- Z. Fan, A. Heinecke and Z. Shen, *Duality for frames*, J Fourier Anal Appl, 22(1) (2016), 71–136.
- P. Casazza, A. Heinecke, K. Kornelson, Y. Wang and Z. Zhou, *Necessary and sufficient conditions to perform spectral tetris*, Linear Algebra Appl, 438(5) (2013), 2239–2255.
- P. Casazza, M. Fickus, A. Heinecke, Y. Wang and Z. Zhou, *Spectral tetris fusion frame constructions*, J Fourier Anal Appl, 18(4) (2012) 828–851.
- P. Casazza, A. Heinecke, F. Krahmer and G. Kutyniok, *Optimally sparse frames*, IEEE Trans Inform Theory, 57 (2011), 7279–7287.
- R. Calderbank, P. Casazza, A. Heinecke, G. Kutyniok and A. Pezeshki, *Sparse fusion frames: existence and construction*, Adv Comput Math, 35(1) (2011), 1–31.
- R. Calderbank, P. Casazza, A. Heinecke, G. Kutyniok and A. Pezeshki, *Constructing fusion frames with desired parameters*, Wavelets XIII (San Diego, CA, 2009), SPIE Proc. 744612-1–744612-10.

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## Talks and tutorials

- Summer Course on Mathematical Signal Processing and Data Analysis, Academia Sinica Institute of Mathematics, Taipei, Taiwan (1 week invited lectures/tutorials, 8/2017)
- NCTS Seminar on Applied Mathematics, National Center for Theoretical Sciences, National Taiwan University, Taipei, Taiwan (6/2017)
- Data Sciences: Bridging Mathematics, Physics and Biology (Conference Session on Frame Theory and Sparse Representation for Complex Data), Institute for Mathematical Sciences, National University of Singapore, Singapore (6/2017)
- Summer Course on Mathematical Signal and Data Analysis, Academia Sinica Institute of Mathematics, Taipei, Taiwan (1 week invited lectures/tutorials, 7/2016)
- 15th International Conference on Approximation Theory, San Antonio, USA (5/2016)
- Mathematical Biology Seminar, Chinese Academy of Sciences, Beijing, China (12/2015)
- International Conference on Wavelets and Applications, Euler International Mathematical Institute, St. Petersburg, Russia (6/2015)
- International Summer School on Wavelet Frames and Signal Processing, Chinese Academy of Sciences, Beijing, China (2 weeks invited lectures/tutorials, 7/2014)
- NUS Applied and Computational Mathematics Seminar, Singapore (2/2013)
- SPIE Optics and Photonics Conference, San Diego, USA (8/2011)

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- 9th International Conference on Sampling Theory and Applications, Singapore (5/2011)
  - Oberseminar in Applied Analysis, Universität Osnabrück, Germany (4/2010)
  - Analysis Seminar, University of Missouri-Columbia, USA (11/2010)
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### **Courses taught**

- Yale-NUS College
    - Applied Harmonic Analysis (Fall 2016/17)
    - Mathematical Methods for Physical Scientists (Spring 2016/17)
    - Advanced Calculus (Analysis on Manifolds) (Spring 2016/17)
    - Introduction to Mathematical Analysis (Fall 2015/16/17)
  - National University of Singapore
    - Graduate Analysis I (Abstract Measure and Integration) (Fall 2013)
  - University of Missouri–Columbia
    - Advanced Calculus I (Spring 2012)
    - Calculus for Social and Natural Sciences (Fall 2011)
    - College Algebra (Spring/Fall 2009)
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### **Professional service**

Reviewer for:

- SIAM Journal on Mathematical Analysis
  - Journal of Fourier Analysis and Applications
  - Applied and Computational Harmonic Analysis
  - Journal of Approximation Theory
  - International Journal of Wavelets, Multiresolution and Information Processing
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