

Curriculum Vitae

Yan Wang

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EDUCATION

- **Ph.D. Candidate, Statistics** 2017/08-now
Department of Statistics, Iowa State University Ames, Iowa, USA
- **Ph.D., Theoretical Physics** 2004/09-2010/07
Department of Physics, Beijing Normal University Beijing, China
- **Visiting Ph.D. Student** 2007/09-2009/08
Department of Electrical Engineering, Arizona State University Tempe, Arizona, USA
- **B.S., Physics** 2000/09-2004/07
Department of Physics, Beijing Normal University Beijing, China

PROFESSIONAL EXPERIENCES

- 05/2018-now: **Research Assistant**
Department of Statistics, **Iowa State University**
- 09/2010-08/2017: **Assistant/Associate Professor**
School of Petroleum Engineering, **China University of Petroleum**
- 09/2015-06/2016: **Visiting Scholar**
Department of Civil Engineering, **Tsinghua University**

RESEARCH INTERESTS

- Machine Learning
- Nonequilibrium Statistical Physics
- Complex Systems

RESEARCH PROJECTS

- **Principal Investigator:** *Study on Key Factors Affecting Anomalous Transport in Complex Pore Networks*, funded by **the National Natural Science Foundation of China**, Grant No. 11305268 (01/2014-12/2016)
- **Principal Investigator:** *Applications of Continuous Time Random Walk Theory in Anomalous Transport in Geological Formations*, funded by **the National Natural Science Foundation of China**, Grant No. 11247246 (01/2013-12/2013)
- **Co-Principal Investigator:** *Structure and Dynamics of Typical Complex Pore Networks of Shallow Subsurface Rock and Soil in Lhasa*, funded by **the National Natural Science Foundation of China**, Grant No. 11465017 (01/2015-06/2017)

TEACHING EXPERIENCES

- **Iowa State University** (as teaching assistant)
STAT 305 (Engineering Statistics): Fall 2017
STAT 401 (Statistical Methods for Research Workers): Fall 2017, Spring 2018

- **China University of Petroleum** (as instructor unless otherwise specified)
Theoretical Mechanics: Spring 2014/2015/2016/2017
Engineering Thermodynamics and Heat Transfer: Spring 2013/2014, Fall 2013/2015
Applied Stochastic Processes: Fall 2012/2013/2014/2015
Tensor Analysis: Fall 2013/2014/2015/2016
Engineering Mechanics: Fall 2013
Rock Mechanics: Fall 2010/2011/2012 (as teaching assistant)
- **Beijing Normal University** (as teaching assistant)
Electromagnetism: Fall 2005

AWARD

- **Best Teaching Award** in 2013, at China University of Petroleum

REFEREE SERVICES

- **Journals**
Physical Review Letters (4); *Physical Review E* (12); *Physical Review Materials* (1);
Europhysics Letters (3); *Journal of Statistical Mechanics* (1); *Journal of Statistical
Computation and Simulation* (3); *Nonlinear Dynamics* (5); *Transport in Porous Media* (1);
AIP Advances (1); *PLOS One* (1); *Entropy* (1); *Petroleum Science* (1)
- **Conferences**
The 16th International Heat Transfer Conference (3)

PUBLICATIONS

- **Peer-Reviewed Journal Papers** (* denotes corresponding author)
Xiaojuan Ma, Liang Huang, Ying-Cheng Lai, **Yan Wang**, and Zhigang Zheng, Synchronization-based scalability of complex clustered networks, *Chaos* 18, 043109 (2008).
Yan Wang, Ying-Cheng Lai, and Zhigang Zheng, Onset of colored-noise-induced synchronization in chaotic systems, *Physical Review E* 79, 056210 (2009).
Yuzhu Xiao, **Yan Wang**, and Ying-Cheng Lai, Dependence of intermittency scaling on threshold in chaotic systems, *Physical Review E* 80, 057202 (2009).
Xiaojuan Ma, **Yan Wang**, and Zhigang Zheng, Effect of leaf nodes on the synchronizability of complex networks, *Acta Physica Sinica* 58, 4426 (2009). (in Chinese)
Yan Wang and Zhigang Zheng, Spreading dynamics on scale-free networks, *Acta Physica Sinica* 58, 4421 (2009). (in Chinese)
Yan Wang, Ying-Cheng Lai, and Zhigang Zheng, Route to noise-induced synchronization in an ensemble of uncoupled chaotic systems, *Physical Review E* 81, 036201 (2010).
Amogh Deshpande, Qingfei Chen, **Yan Wang**, Ying-Cheng Lai, and Younghae Do, Effect of smoothing on robust chaos, *Physical Review E* 82, 026209 (2010).
Yan Wang, Stochastic waiting time sampling method in the CTRW model, *Chinese Journal of Computational Physics* 30, 571 (2013). (in Chinese)
Yan Wang, Anomalous transport in weakly heterogeneous geological porous media, *Physical Review E* 87, 032144 (2013).
Yan Wang, Optimization in finite-reservoir finite-time thermodynamics, *Physical Review E* 90, 062140 (2014).

Yan Wang and Xiao-Rong Yang, Universal relation for transport in non-sparse complex networks, *Chinese Physics B* 24, 118902 (2015).

Yan Wang, Optimizing work output for finite-sized heat reservoirs: Beyond linear response, *Physical Review E* 93, 012120 (2016).

Yan Wang, Unified approach to thermodynamic optimization of generic objective functions in the linear response regime, *Entropy* 18, 161 (2016).

Shiyuan Li, Lars Reuning, Gabriele Marquart, **Yan Wang**, and Pengyun Zhao, Numerical model of halite precipitation in porous sedimentary rocks adjacent to salt diapirs, *Journal of Geophysics and Engineering* 14, 1160 (2017).

Xiang Ding, Guangqing Zhang, Bo Zhao, and **Yan Wang***, Unexpected viscoelastic deformation of tight sandstone: Insights and predictions from the fractional Maxwell model, *Scientific Reports* 7, 11336 (2017).

Xiao-Rong Yang and **Yan Wang***, Ubiquity of anomalous transport in porous media: Numerical evidence, continuous time random walk modelling, and hydrodynamic interpretation, *Scientific Reports* 9, 4601 (2019).

Qing Lin, Bin Wan, **Yan Wang**, Yunhu Lu, and Joseph F. Labuz, Unifying acoustic emission and digital imaging observations of quasi-brittle fracture, *Theoretical and Applied Fracture Mechanics* 103, 102301 (2019).

Qing Lin, Siqi Wang, Bin Wan, Yunhu Lu, and **Yan Wang***, Characterization of Fracture Process in Sandstone: A Linear Correspondence Between Acoustic Emission Energy Density and Opening Displacement Gradient, *Rock Mechanics and Rock Engineering* (2019).
<https://doi.org/10.1007/s00603-019-01949-8>

- **Conference Papers/Talks/Posters**

Xiaojuan Ma, **Yan Wang**, and Zhigang Zheng, Analyzing chaotic systems by network characteristics, *The 3rd National Forum on Complex Dynamical Networks*, Beijing, China (2006).

Xiaojuan Ma, Liang Huang, Ying-cheng Lai, **Yan Wang**, and Zhigang Zheng, Size dependence of synchronizability in complex clustered networks, *The 4th National Forum on Network Science and Graduate Student Summer School*, Beijing, China (2008).

Yan Wang, Liang Huang, Ying-Cheng Lai, and Zhigang Zheng, Detecting the structure of coupled phase oscillator networks, *The 4th National Forum on Network Science and Graduate Student Summer School*, Beijing, China (2008).

Yan Wang, Theory and modeling of anomalous transport in geological porous media, *Satellite Meeting of the 25th IUPAP International Conference on Statistical Physics (Statphys25)*, Qufu, China (2013).

Yan Wang, Anomalous transport in geological formations and the continuous-time random walk model, *The Chinese Congress of Theoretical and Applied Mechanics (CCTAM 2015)*, Shanghai, China (2015).

Shiyuan Li, Qing Lin, and **Yan Wang**, Numerical studies of the deformation of salt bodies with embedded carbonate or anhydrite stringers, *The 50th U.S. Rock Mechanics / Geomechanics Symposium*, Houston, USA (2016).

Yan Wang, Some remarks on finite-reservoir finite-time thermodynamics within and beyond the linear response regime, *The 26th IUPAP International Conference on Statistical Physics (Statphys26)*, Lyon, France (2016).