

Marc Kjerland, PhD

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Computational scientist with experience modeling real-world high-dimensional systems, applying novel quantitative techniques to multiscale problems, and collaborating in international settings

Skills

- Nonlinear and multiscale systems
- Time series analysis
- Statistical data analysis
- GIS and geospatial analysis
- Scientific visualization
- Geophysical modeling
- Multivariate regression
- Machine learning
- High-performance computing
- Peer-reviewed publication

Research Experience

Kyoto University

Disaster Prevention Research Institute

Kyoto, Japan

July 2015 – present

- Develop coastal flooding simulations using large atmospheric datasets
- Quantify hazard impacts of changing typhoon distributions in northwest Pacific
- Implement novel methods in high-performance computing for cost efficiency

University of Illinois at Chicago

Institute for Environmental Science and Policy

Chicago, IL

2014 – 2015

- Evaluated institutional performance from data-driven urban metabolism framework
- Implemented regression models, optimized comparison indices, and trend analysis

University of Illinois at Chicago

Department of Mathematics

Chicago, IL

2010 – 2014

- Examined dynamics of multiscale systems in chaotic and periodic regimes
- Generated ensemble solutions to analyze statistical response of reduced-dimension systems

Education

PhD, Applied Mathematics

Thesis: Linear response closure approximations for multiscale systems

University of Illinois at Chicago

2015

B.S., Mathematics

University of Minnesota, Twin Cities

2005

Technical skills

Programming languages: Python, C/C++, Fortran, Matlab

Natural languages: English, French, German, Japanese

Python packages: numpy, scipy, scikit-learn, pandas, matplotlib, jupyter, gdal

Other: \LaTeX , Bash scripting, OpenMP, GitHub, QGIS, Excel, Photoshop