



IGPP Virtual Seminar Series

Matthias Morzfeld

Institute of Geophysics and Planetary Physics
Scripps Institution of Oceanography, UC San Diego

Numerical challenges in Bayesian inference: Ill conditioned problems, high-dimensional problems, and trans-dimensional problems

Date: Tuesday, April 28, 2020

Time: 12:30 pm - 1:45 pm, Pacific Time

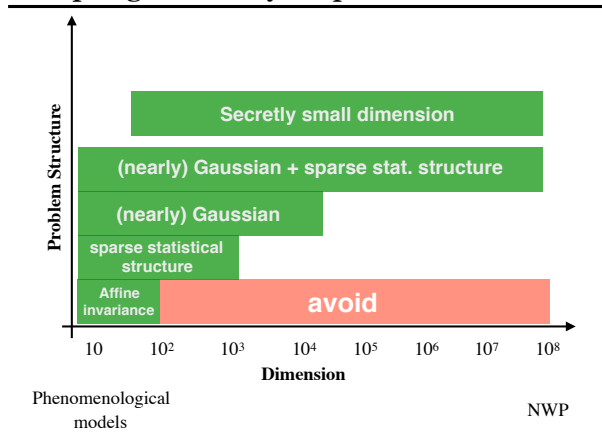
Host: Tianze Liu

Register to attend:

<https://ucsd.zoom.us/meeting/register/tJlrdytpzkiHddQPeQoi2mxZhXThyWdD6qW>

Because this meeting will be recorded, please do not attend if you feel uncomfortable with it.

Sampling feasibility map



I will provide a quick review of the problem formulation of Bayesian inference and associated sampling methods. I then discuss the difficulties one can run into when solving Bayesian inference problems via sampling. These difficulties include anisotropies in posterior distributions and, of course, the extremely high-dimensionality typical of many geophysical problems. I will outline theory and intuition about how to overcome these difficulties. Finally, I discuss trans-dimensional inference in which the complexity of the numerical model is itself an unknown and present preliminary result of an ensemble sampler for trans-dimensional sampling problems.