Computational and Data Enabled Science Seminar

Short hands-on course on CUQIpy - a new Python platform for computational uncertainty quantification in inverse problems

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Abstract: CUQIpy (pronounced "cookie pie") is a new computational modelling environment in Python that uses UQ (Bayesian statistics and sampling) to access and quantify the uncertainties in solutions to inverse problems. The overall goal of the software package is to allow both expert and non-expert (without deep knowledge of statistics and UQ) users to perform UQ related analysis of their inverse problem while focusing on the modelling aspects. To achieve this goal the package utilizes state-of-the-art tools and methods in statistics and scientific computing specifically tuned to the ill-posed and often large-scale nature of inverse problems to make the UQ feasible.

The training course will be very hands-on with Jupyter notebook exercises demonstrating basic and more advanced functionality of CUQIpy. No installation is necessary, as exercises will be run on our online platform accessed through a normal browser, so participants should just bring a laptop with wifi access to join the zoom meeting and the online platform (instructions will be given during the course).

Thursday, September 15, 2022, 8:30 am

MSC N301

Mathematics
Emory University