Contribution ID: **45**   Type: **Plenary**

Extracting Rigorous Conclusions from Model/Data Comparisons

Wednesday, 3 September 2014 11:50 (35 minutes)

Many fields of science have developed multi-scale multi-component models to address large-scale heterogenous data sets. Constraining model parameters is made difficult by the inherent numerical cost of running such models and by the intertwining dependencies between parameters and observables. I will describe how the MADAI Collaboration has developed a suite of statistical tools based on the strategy of model emulators to meet these challenges. The tools have been applied to problems in galaxy formation and in relativistic heavy ion collisions, and have been formulated so that they can be transferred or expanded for numerous other problems. The tools assist with the distillation of data, the creation of model emulators and the exploration of parameter space via Markov Chain Monte Carlo. I will focus on the application to relativistic heavy ion collisions, where these methods are providing the means to reach the field's first rigorous quantitative conclusions.

Primary author: PRATT, Scott (Michigan State University)

Presenter: PRATT, Scott (Michigan State University)

Session Classification: Plenary

Track Classification: Data Analysis - Algorithms and Tools