Use of machine learning techniques for analysis of plasma data
LOGAN MAINGI, University of Oklahoma, HARRY MYNICK, NEIL POMPHEY, Princeton Plasma Physics Laboratory — We consider the application of machine learning techniques to results from gyrokinetic (GK) codes such as Gene [1]. GK codes allow accurate computation of physical quantities such as radial fluxes, potential fluctuations, etc. However, such codes are computationally expensive, so use of techniques (eg, neural networks) to reduce the number of simulations necessary is desirable. Strategies are considered to minimize the requisite number of training examples for such a network without risk of error due to underfitting or overfitting.