

Abstract Submitted
for the APR17 Meeting of
The American Physical Society

An architecture for efficient multimodal parameter estimation with linear surrogate models RICHARD O'SHAUGHNESSY, Rochester Institute of Technology, SCOTT FIELD, University of Massachusetts, Dartmouth — In this talk, we present a natural union of two techniques: reduced order modeling and an alternative factorization of the likelihood function. We show that in a suitable (linear) basis, likelihood evaluations become effectively analytic, enabling embarrassingly parallel Monte Carlo integration over all intrinsic parameters, except mass. We demonstrate the utility of our method using synthetic events similar to GW150914. We describe the extraordinary efficiency this calculation allows. We discuss applications to low-latency parameter estimation and searches for gravitational waves.

Richard O'Shaughnessy
Rochester Institute of Technology

Date submitted: 30 Sep 2016

Electronic form version 1.4