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Rapid Compact Binary Coalescence Parameter Estimation CHRIS PANKOW, Northwestern University, PATRICK BRADY, University of Wisconsin-Milwaukee, RICHARD O'SHAUGHNESSY, Rochester Institute of Technology, EVAN OCHSNER, HONG QI, University of Wisconsin-Milwaukee — The first observation run with second generation gravitational-wave observatories will conclude at the beginning of 2016. Given their unprecedented and growing sensitivity, the benefit of prompt and accurate estimation of the orientation and physical parameters of binary coalescences is obvious in its coupling to electromagnetic astrophysics and observations. Popular Bayesian schemes to measure properties of compact object binaries use Markovian sampling to compute the posterior. While very successful, in some cases, convergence is delayed until well after the electromagnetic fluence has subsided thus diminishing the potential science return. With this in mind, we have developed a scheme which is also Bayesian and simply parallelizable across all available computing resources, drastically decreasing convergence time to a few tens of minutes. In this talk, I will emphasize the complementary use of results from low latency gravitational-wave searches to improve computational efficiency and demonstrate the capabilities of our parameter estimation framework with a simulated set of binary compact object coalescences.

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