

Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Swarm Intelligence to detect Gravitational Waves. VARUN SRIVASTAVA, Syracuse Univ, ANURADHA SAMAJHDAR, RAJESH NAYAK, Indian Institute of Science Education and Research, Kolkata, SUKANTA BOSE, Inter-University Centre for Astronomy and Astrophysics, Pune — We investigate the use of particle swarm optimization (PSO) algorithm in the detection of gravitational waves from compact binary coalescences. The main advantage of PSO is that it can be fast without hampering the effectiveness of the search. This property can be used to reduce the computational burden and speed up the detection process. An early detection helps electromagnetic follow-up of gravitational wave triggers. A PSO based detection search is a continuous search in parameter space and thus overcomes the hurdles in generation of template banks. In future, this can help speed up parameter estimation as well. We present results for coincident and coherent searches for CBCs with PSO algorithm.

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Date submitted: 12 Jan 2018

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