Swarm Intelligence to detect Gravitational Waves. VARUN SRI-
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University Centre for Astronomy and Astrophysics, Pune — We investigate the use
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 de-
tection 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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