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# Exploiting the standing accretion shock instability for multi-messenger analysis of core-collapse supernovae

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Core Collapse supernovae are among the most interesting source of possible multimessenger detections, given the joint production of electromagnetic, neutrino and gravitational waves (GW). In this work we investigate the correlation of SASI structure of neutrino and GW to enhance the GW detection. We compare different search analyses for the case of a benchmark three-dimensional CCSN simulation with zero-age main sequence mass of 24 solar masses. In particular, we build a matched filter analysis which increase detection efficiency of 30% with respect to a standard excess power algorithm for nearby CCSN (less than 1.5 kpc). At further distance we expect that additional work is needed to outline the best strategy for GW detection from CCSN.

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