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Search for gravitational waves from Scorpius X-1 in the third observing run of Advanced LIGO

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We present an overview of a search for continuous gravitational waves from the low-mass X-ray binary Scorpius X-1 (Sco X-1), using two pipelines: a hidden Markov model (HMM) and a cross correlation approach. This search improves on previous Sco X-1 searches by introducing new features for each pipeline. For the HMM model, we use a new frequency domain matched filter. The cross correlation pipeline has been improved with a new re-sampling code, as well as a more efficient template bank, both of which significantly improve the computation times. We will also discuss projected sensitivities for the search using LIGO O3 data, and how that sensitivity compares to current best observational and indirect limits.

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