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Bayesian inference on spinning compact-binary inspirals with ground-based gravitational-wave laser interferometers MARC VAN DER SLUYS, CHRISTIAN ROEVER, ALEXANDER STROEER, NELSON CHRISTENSEN, VICKY KALOGER, RENATE MEYER, ALBERTO VECCHIO, ILYA MANDEL — We present a Markov-Chain Monte-Carlo (MCMC) technique to study the source parameters of signals from the inspirals of stellar-mass compact binaries observable with ground-based gravitational-wave detectors such as LIGO and Virgo. We use a number of modifications to the standard MCMC in order to efficiently probe the parameter space while keeping the algorithm suitable for a wide range of signals. We shall discuss the performance of the MCMC algorithm and the typical measurement accuracy of the source parameters as a function of the binary parameters and the number of detectors in the network. We will show that despite the lower positional accuracy compared to other astronomical observations, an association of a gravitational- wave event with e.g. an electomagnetic detection is possible with three or even two 4-km-size interferometers.

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