Bayesian Parameter Estimation for Binary Neutron Star Inspirals

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General Relativity Theory predicts the existence of gravitational radiation, and several observatories have been built and are being put into operation in order to measure its effect. One candidate event that might be among the first to be observed is a *binary inspiral*, which will induce strong gravitational radiation that is expected to be detectable by today's gravitational wave observatories. Apart from the detection itself, it is of interest to derive parameters like location and individual masses of the inspiral's two companions from the measured detector response.
We introduce a Bayesian analysis strategy for this purpose, processing simultaneous measurements from different detectors and accounting for their different characteristics, such as sampling rates and coloured noise. An MCMC algorithm has been implemented for the posterior approximation, and is at the moment being extended by incorporating a *parallel tempering* scheme. Some preliminary results are shown.