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Zhoujian Cao* (zjcao@amt.ac.cn), Zhongguancun Donglu 55, Beijing, 100190. *Gravitational wave model for an eccentric binary based on EOBNR.*

Binary black hole systems are among the most important sources for gravitational wave detection. And also they are good objects for theoretical research for general relativity. Gravitational waveform template is important to gravitational wave detection data analysis. Effective one body numerical relativity model has played an eccentrical role in the LIGO data analysis. For future space-based gravitational wave detection, many binary systems will admit some orbit eccentricity. At the same time the eccentric binary is also an interesting topic for theoretical study in general relativity. In this paper we construct the first eccentric binary waveform model based on effective one body numerical relativity (EOBNR) framework. Our basic assumption in the model construction is the involved eccentricity is small. We have compared our eccentric EOBNR model to the circular one used in LIGO data analysis. We have also tested our eccentric EOBNR model against to another recently proposed eccentric binary waveform model; against to numerical relativity simulation results; and against to perturbation approximation results for extreme mass ratio binary systems. (Received September 05, 2017)