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Reconstruction of chirp mass and eccentricity in the search for eccentric binary black holes VAIBHAV TIWARI, SERGEI KLIMENKO, Univ of Florida - Gainesville — Eccentric binary black holes are expected to form because of dynamic interaction in the galactic nuclei. A significant fraction of such systems may maintain high eccentricities throughout their lifetime. Gravitational waves (GWs) emitted by these sources have a unique signature and may not be captured efficiently by the searches designed for circular systems. A search for the eccentric binary black holes on the data obtained from GW detectors, LIGO and VIRGO over the S5/S6-VSR1/2/3 run, is being developed using the coherent burst algorithm. The basic premise of the burst search is the detection of un-modeled gravitational wave signals. In the presented talk we describe the reconstruction of the chirp mass and eccentricity from the expected signal signature in the time-frequency domain. The reconstructed parameters are used to constrain the search and improve the search sensitivity.

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