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Searches for Gravitational Waves from Known Pulsars at Two Harmonics in the Second and Third LIGO-Virgo Observing Runs

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I shall present the results of the recent LIGO-Virgo-KAGRA paper on the targeted search from 236 pulsars. When the angular momentum of the pulsar is not perfectly aligned with its symmetry axis, the gravitational wave (GW) signal can originate at both once and twice the spin frequency of the pulsar due to the time-varying quadrupole moment. There has also been a quest to search for the dipole radiation at once the spin frequency predicted by Brans- Dicke (BD) theory. The methods implemented to search for the signals are Bayesian analysis, 5n-vector method and F/G/D-statistics.

Presenter(s) : VERMA, Paritosh (NCBJ)