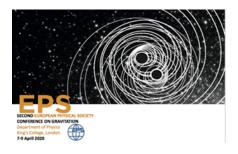
## Second European Physical Society Conference on Gravitation: measuring gravity



Contribution ID: 8 Type: talk

## **Probing Quadratic Gravity with Binary Inspirals**

Monday, 5 July 2021 14:19 (1 minute)

We study gravitational waves generated by binary systems within an extension of General Relativity which is described by the addition of quadratic in curvature tensor terms to the Einstein-Hilbert action. Treating quadratic gravity as an effective theory valid in the low energy/curvature regime, we argue that reliable calculations can be performed in the early inspiral phase, and furthermore, no flux of additional massive waves can be detected. We then compute the -1PN and -2PN leading corrections to the post-Newtonian (PN) expansion of the standard waveform. By confronting these theoretical calculations with available experimental data, we constrain both unknown parameters of quadratic gravity.

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Session Classification: Recorded Talks: Experimental Challenges in Gravitational Wave Detection