Contribution ID: **603** Type: **Talk in the parallel session**

Memory effects in Kundt geometries for Brans-Dicke gravity

Wednesday, 7 July 2021 07:50 (20 minutes)

Understanding gravitational wave memory effects for exact radiative solutions in General Relativity (GR) have received considerable attention lately, following the work of Zhang, Duval, Gibbons and Horvathy (PRD, 2017). In principle, one can arrive at these effects by studying the separation of pairs of geodesics in such spacetimes. Radiative geometries such as Kundt waves have shown to possess distinct memory behaviour. In this talk, after a brief review of results in GR, we move on to discuss our recent work in Brans-Dicke gravity. Constructing an exact solution for Kundt waves and gyratons in this theory, we investigate memory by analysing both geodesics and geodesic deviation. Our study reveals significant differences in memory effects obtained for both these geometries (i.e. with and without gyratonic terms) as well as with earlier related results obtained in GR.

Primary authors: CHAKRABORTY, Indranil (IIT Kharagpur); Mr SIDDHANT, Siddhant (IIT Kharagpur); Prof. KAR, Sayan (IIT Kharagpur)

Presenter: CHAKRABORTY, Indranil (IIT Kharagpur)

Session Classification: Exact Solutions (Including Higher Dimensions)

Track Classification: Exact Solutions: Exact Solutions (including higher dimensions)