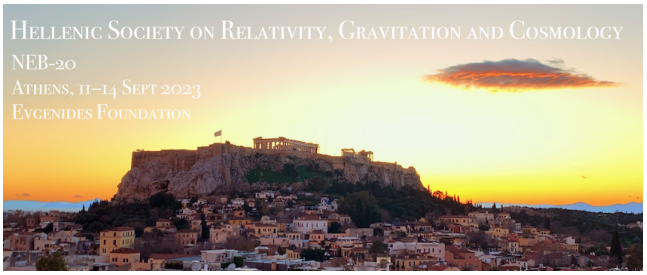

Contribution ID: **47** Type: **not specified**

Asymptotic gravitational-wave fluxes from a spinning test body on generic orbits around a Kerr black hole

Monday, 11 September 2023 17:40 (20 minutes)

This work provides gravitational wave energy and angular momentum asymptotic fluxes from a spinning body moving on generic orbits in a Kerr spacetime up to linear in spin approximation. To achieve this, we have developed a new frequency domain Teukolsky equation solver that calculates asymptotic amplitudes from generic orbits of spinning bodies with their spin aligned with the total orbital angular momentum. However, the energy and angular momentum fluxes from these orbits in the linear in spin approximation are appropriate for adiabatic models of extreme mass ratio inspirals even for spins non-aligned to the orbital angular momentum. To check the newly obtained fluxes, they were compared with already known frequency domain results for equatorial orbits and with results from a time domain Teukolsky equation solver called Teukode for off-equatorial orbits. The spinning body framework of our work is based on the Mathisson-Papapetrou-Dixon equations under the Tulczyjew-Dixon spin supplementary condition.

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