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# A novel Lagrange-multiplier approach to the effective-one-body dynamics of binary systems in post-Minkowskian gravity

*Tuesday 2 September 2025 15:40 (20 minutes)*

In this talk, based on the recent work \[2503.05487\], I will present a new way of formulating the effective-one-body (EOB) dynamics, particularly useful for implementing post-Minkowskian results in waveform models for compact binaries. After having motivated the change of paradigm that this new approach brings forth, I will go over its main characteristics and show how it yields, with the crucial use of a Lagrange multiplier in the EOB action, new EOB equations of motion in Euler-Lagrange form. Finally, I will show the performance of an EOB model, built upon this new Lagrange-EOB dynamics, that combines post-Newtonian and post-Minkowskian information.

**Authors:** DAMOUR, Thibault (IHES); NAGAR, Alessandro (Istituto Nazionale di Fisica Nucleare); PLACIDI, Andrea (University of Perugia); Dr RETTEGNO, Piero (INFN - sezione di Torino)

**Presenter:** PLACIDI, Andrea (University of Perugia)

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