

Three-body problem in General Relativity

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ABSTRACT

Three-body systems are very common in the universe and it is likely that future gravitational-wave detectors will detect them and measure their parameters. I will introduce a new approach ("Effective Two-Body") perturbatively solving the motion of hierarchical three-body systems by relying on the existence of two expansion parameters: small velocities and large separation of the third body. I will show how this new EFT formulation allows to compute the relativistic Hamiltonian of three-body systems order-by-order, and I will present some applications to long-term evolution of three-body systems and waveform modelling

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