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Black Hole Perturbation Theory, Scattering Amplitudes and Gravitational Waves

mercredi 27 novembre 2024 15:00 (1 heure)

We will review Black hole perturbation theory, a formalism for studying massless linear perturbations of black holes. This formalism leads to the Teukolsky master equation, which is related to the Heun differential equations. We will show that the methods of 2d conformal field theory lead to novel solutions, which are related to the traditional Mano-Suzuki-Takasugi solutions in general relativity. We will also show how to extract scattering amplitudes which are relevant to gravitational wave phenomenology.

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