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Interferometer systems close to the earth

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The general relativity gyromagnetic effects of an electron close to the earth's magnetic field, can be distinguished by those generated by the most general setting (expressing form a gravitational wave(s background)) of a test particle orbiting a non symmetric Kerr-Newman black hole can be analyzed at 2-5 Post-Newtonian parameterized formalisms compared (after Birkoff's theorem of asymptotic flatness), by the suitable spectral analysis. The quantum effects can be controlled by a one-arm Michelson interferometer, while the information about the pre-goemetry information about an ideally-emerging spacetime can be (at least partially) explored by interferometers. The spectral analysis reveals at the requested order the two different contributions. The possible results of other theories of gravitations, which include Einsteinian gravity as a low-energy limit, can also be sampled in the spectral analysis, according to the different contributions in the detected (suitably reconstructed) spectrum. The lower order within the spectral analysis in the energy and in the mass/length can account for other phenomena. Both single interferometers and coupled interferometers can be considered. The developments of technical improvements of interferometers, as well as the appropriate application of computer-based techniques for the electrically-converted signal will be analyzed. This spectral analysis allows to discern from modified theories of gravity, also within the most general reformulation, due to a different order (2-3) in the spectral analysis.

Biography

Orchidea Maria Lecian graduated in Theoretical Physics and defended her PhD thesis in relativistic astrophysics at Sapienza University of Rome- International Center for Relativistic Astrophysics. Her research interest are general relativity, applied mathematics and theoretical cosmology.

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