

Two body dynamics in the post-Newtonian approximation beyond fourth perturbative order

The application of effective field theory methods to the analytic study of the two body motion in General Relativity has revived an old field of studies with new ideas and enabled the interaction of previously disconnected research communities. After the recent results of the (re)-derivation of the conservative dynamics at fourth post-Newtonian order and of the third order post-Minkowskian order, it is clear that that effective field theories applied to amplitude computation can be applied with success to gravitational problems.

As an example of a new result we show the derivation of the static sector at fifth post-Newtonian order, by using manifest factorization properties of diagrams that occur at any odd post-Newtonian orders.