Poster Session #C
Gravity theories

C18

Superradiance in deformed Kerr black holes

Mauro Oi (INFN Sezione di Cagliari)

Recent strong-field regime tests of gravity are consistent with general relativity. In particular, astrophysical black holes seem to be all described by the Kerr spacetime, but the statistical error on the observations allows for small yet detectable deviations from this description. In this talk we discuss superradiance of scalar and electromagnetic test fields in deformed Kerr spacetimes and we observe that for large deformations superradiance is highly suppressed with respect to the Kerr case. Surprisingly, for small deformations there exists a range of values for the deformation parameter for which the maximum amplification factor is larger than the Kerr one. We also provide a first result about the superradiant instability of these deformed spacetimes against massive scalar fields.