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Authors:	Gaurav, Apoorv
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Abstract:	General Relativity is a theory given by Einstein as an attempt to explain gravity. This is a geometrical theory that imagines a manifold created by spacetime. On this background astrophysical object exists, which because of their masses give spacetime its curvature. And this curvature dictates the motion of particles in the spacetime. So in a sense, in general relativity, curvature takes the seat of gravitational potential in the Newtonian theory of gravity. In this thesis, we have studied superradiance in presence of different background cur vature. The project is broadly divided into three parts on the basis of the asymptote background curvature. In the first part, we have studied the superradiance in presence of Schwarzschild black hole and Kerr Balck hole, both of them are in asymptotically flat spacetime. In the second part, we have studied the superradiance in Kerr black hole in DeSitter Spacetime. And in the final part, we have studied the superradiance in presence of BTZ black hole which has AdS spacetime as its asymptote
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