

Spherical collapse and black hole evaporation

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We consider 4d spherical collapse of a massless scalar field with a novel Areal Radius dependent coupling and obtain the following results:

(i) classical collapse is described by the Vaidya solution (ii) quantum back reaction can be explicitly computed (iii) the semiclassical solution

describes black hole formation, subsequent evaporation along a timelike 'dynamical horizon' and a back reaction corrected balance

law at future null infinity. The analysis, supportive of the Ashtekar-Bojowald paradigm, suggests the emergence of all information including

that in the collapsing matter along a quantum extended future null infinity.

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