

Spontaneous scalarization in generalised scalar-tensor theory

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Spontaneous scalarization is a mechanism that endows relativistic stars and black holes with a nontrivial configuration only when their spacetime curvature exceeds some threshold. The standard way to trigger spontaneous scalarization is via a tachyonic instability at the linear level, which is eventually quenched due to the effect of non-linear terms. At this work (Phys. Rev. D 99, 124022 (2019) and arXiv:1904.06365) we identify all of the terms in the Horndeski action that contribute to the (effective) mass term in the linearized equations and, hence, can cause or contribute to the tachyonic instability that triggers scalarization. We acknowledge networking support by the COST Action GWverse Grant No. CA16104.

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