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Non-Existence of Black Holes with Non-Canonical Scalar Fields

In this talk we'll study the existence of black holes with non-canonical scalar fields as matter source and prove a simple no-hair theorem which rules out the existence of stationary, asymptotically flat black holes possessing scalar hair for a wide class of such models. This applies in particular to K-essence theories like the ghost condensate model, and large sectors of the dilatonic ghost condensate and Dirac-Born-Infeld models.

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