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Peer Review

Review of: "Inverting No-Hair Theorems: How Requiring General Relativity Solutions Restricts Scalar-Tensor Theories"

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This manuscript presents a comprehensive and well-executed classification of higher-derivative scalar-tensor theories that admit General Relativity (GR) solutions as exact solutions. The authors focus on identifying subclasses of these theories—specifically U-DHOST theories—that are free from Ostrogradsky ghosts, and yet preserve key GR spacetimes such as the Schwarzschild and Schwarzschild–de Sitter metrics.

A notable strength of the paper is that the main results are clearly stated at the beginning and are effectively summarized in a well-structured table. This presentation significantly improves readability and accessibility, even for readers not deeply familiar with the technical aspects of DHOST theories.

The analysis is technically sound, methodologically transparent, and extends previous work by relaxing the assumption of shift symmetry. The inclusion of linear perturbation analysis further reinforces the relevance and robustness of the results.

In my view, the manuscript is of high quality and makes a meaningful contribution to the field. I have no criticisms or requests for revision.

Declarations

Potential competing interests: No potential competing interests to declare.

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