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(POS-71) Scalar-tensor realizations of the ugly duckling of the Hawking-Ellis classification of stress-energy tensors

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In General Relativity, the “ugly duckling” of the Segre-Plebanski-Hawking-Ellis classification of stress-energy tensors (type III) is very difficult (and was believed to be impossible) to realise. Effective stress-energy tensors in alternative gravity cover a wider range of possibilities. We report a class of type III realisations in first-generation scalar-tensor and in Horndeski gravity, together with their physical interpretation. The ugly duckling may be a freak of nature of limited importance but it is not physically impossible.

[Based on N. Banerjee, V. Faraoni, R. Vanderwee, A. Giusti 2023, Phys. Rev. D 108, 084047 (arXiv:2307.13846)]

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Keyword-2

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Keyword-3

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