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Imperfect fluid description of modified gravities

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Scalar-tensor and f(R) gravity can be described as general relativity plus an effective imperfect fluid corresponding to the scalar field degree of freedom of these theories. A symmetry of electrovacuum Brans-Dicke gravity translates into a symmetry of the corresponding effective fluid. We present the formalism and an application to an anomaly in the limit of Brans-Dicke theory to Einstein gravity. The case of a null dust effective fluid is briefly discussed.

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