



# On the redundancy of operators and the bispectrum in the most general second-order scalar-tensor theory

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In this short note we explain how to use the linear equation of motions to simplify the third-order action for the cosmological fluctuations. No field redefinition is needed in this exact procedure which considerably limits the range of independent cubic operators, and hence of possible shapes of the primordial bispectrum. We demonstrate this in the context of the most general single-field scalar-tensor theory with second-order equations of motion, whose third-order action has been calculated recently in [arXiv:1107.2642](#) and [1107.3917](#). In particular, we show that the three cubic operators initially pointed out in these works as new compared to k-inflation can actually be expressed in terms of standard k-inflationary operators.

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