

# Self-consistency of higher-order gravities

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May 29, 2017

## ABSTRACT

*We show that, in all metric theories of gravity with a general covariant action, gravity couples to the gravitational energy-momentum tensor in the same way it couples to the matter energy-momentum tensor order by order in the weak field approximation around flat spacetime. We discuss the relation of this property to the Strong Equivalence Principle, the self-consistency problem and bootstrap. This talk is based on ref. [1]*

## References

- [1] T. Ortín, “Higher order gravities and the Strong Equivalence Principle,” arXiv:1705.03495 [gr-qc].