

# VARIOUS FORMULATIONS OF GRAVITATIONAL INTERACTION

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These lectures aim at the fundamental aspects of the main gravity theories coming from Hilbert-Einstein formulation of gravitational interaction. The journey assumes the following milestones: i) standard Hilbert-Einstein formulation; ii) Palatini and spin-connection description; iii) ADM decomposition; iv) multi-derivative formulations of Lovelock-type; and v) various  $f(R)$ -like gravities.

## References

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- [4] D. Lovelock, *Divergence-free tensorial concomitants*, *Aequationes mathematicae* **4** (1970) 127–138
- [5] D. Lovelock, *The Einstein Tensor and Its Generalizations*, *J. Math. Phys.* **12** (1971) 498–501