

## Contributed Talk

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**Title:** Exact solutions with null radiation in higher and infinite derivative gravity

**Abstract:** I will describe methods we recently used for finding solutions with null radiation in generic theories of gravity with quadratic curvature; these include, not only the well-known Stelle's fourth derivative gravity but also, for example, the non-local gravity with an infinite number of derivatives. Although the field equations are very complicated in general, they simplify drastically for pp-waves of type III and some other non-expanding gravitational waves. The resulting equations can be solved exactly due to partial decoupling and linearity. To provide explicit examples, I will present some solutions describing gravitational waves generated by (spinning) null matter propagating in Minkowski and (anti-)de Sitter spacetimes, which are higher-derivative/non-local analogues of Aichelburg-Sexl, Hotta-Tanaka, and gyraton metrics.