Institut Henri Poincaré

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String Theory in Greater Paris

Rencontres Théoriciennes

“Supergravité, théorie des cordes et théorie M”

Jeudi 30 Novembre 2017, 10:00

Harvey Reall

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On the well-posedness of Lovelock and Horndeski theories of gravity

Lovelock theories are the most general theories of a metric tensor with second order equations of motion. Horndeski theories are the most general four-dimensional theories of a metric tensor and a scalar field with second order equations of motion. Many hundreds of papers have been written about these theories. But it is unknown whether they satisfy a basic consistency requirement, namely well-posedness of the initial value problem. I will discuss this problem and explain why the method used to establish well-posedness of the Einstein equation fails for Lovelock theories and the most general Horndeski theories.

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