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SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 15 de dezembro (quinta-feira), às 13h30, sala 6.2.33

Global solutions to the Einstein-Klein-Gordon system

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Abstract:

I will discuss the global evolution problem for self-gravitating massive matter in the context of Einstein's theory and, more generally, of the $f(R)$ -theory of gravity. In collaboration with Yue Ma (Xian), I have investigated the global existence problem for the Einstein-Klein-Gordon system and established that Minkowski spacetime is globally nonlinearly stable in presence of massive fields. The method proposed by Christodoulou and Klainerman and the more recent proof in wave gauge by Lindblad and Rodnianski only cover vacuum spacetimes or massless fields. Analyzing the time decay of massive waves requires a completely new approach, the Hyperboloidal Foliation Method, which is based on a foliation by asymptotically hyperboloidal hypersurfaces and on investigating the algebraic structure of the Einstein-Klein-Gordon system. Blog: <https://philippelefloch.org/>

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