



Seminário de Geometria

10/04/2019

Quarta-feira às 10h30 no Auditório do MAT

Estimates and vanish conditions on Weyl for Einstein-type manifolds

Benedito Leandro Neto

bleandroneto@gmail.com

UFG - Jataí

Abstract In this paper, we consider an Einstein-type equation which generalize important geometric equations, like static equations and critical point equations. First, considering the compact case, we prove that a fourth order divergence-free Weyl tensor is harmonic if the radial Weyl curvature vanish. Then, in the noncompact case, we prove estimates for the potential function associate with this Einstein-type equation, provide some additional conditions. Thus, we conclude that the volume of the geodesic balls have exponential growth at infinity, and then we prove that a weak version of the Omori-Yau maximum principle holds. Furthermore, if the radial Weyl curvature is zero, the Weyl tensor is fourth order divergence-free and the Ricci tensor is bounded, then the manifold is locally a warped product with $(n - 1)$ -dimensional Einstein fibers. We finish proving a result about nonexistence of multiple black holes in static spacetimes.