

Besse conjecture with the Weyl tensor conditions

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On a compact n -dimensional manifold, it is well known that a critical metric of the total scalar curvature, restricted to the space of metrics with unit volume is Einstein. It has been conjectured that a critical metric of the total scalar curvature, restricted to the space of metrics with constant scalar curvature of unit volume, will be Einstein. This conjecture, proposed in 1987 by Besse, has not been resolved. In this talk, we prove the Besse conjecture with various vanishing conditions on the Weyl tensor.