

Rigidity phenomena involving scalar curvature, *Surveys in Differential Geometry XVII*, 179–202 (2012)

We give a survey of various rigidity results involving scalar curvature. Many of these results are inspired by the positive mass theorem in general relativity. In particular, we discuss the recent solution of Min-Oo's Conjecture for the hemisphere (cf. [13]). We also analyze the case of equality in Bray's volume comparison theorem.