Proving sphere theorems using the Ricci flow

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May 30, 2007

Abstract

We confirm an old conjecture of Hamilton and show that the Ricci flow evolves compact manifolds with positive curvature operators to manifolds with constant curvature. The new methods introduced in the proof were recently used by Brendle and Schoen to prove that quater pinched manifolds are space forms. I will briefly sketch what is needed for this remarkable extension.