

New examples of $\text{Ric}_2 > 0$

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Alan Weinstein introduced the concept of "fat bundle" as a tool to understand when the total space of a fiber bundle with totally geodesic fibers allows a metric with positive sectional curvature. In recent times, certain weaker notions than the condition of having a metric with positive sectional curvature have been studied due to the apparent scarcity of spaces that meet this condition. Positive k th-intermediate Ricci curvature ($\text{Ric}_k > 0$) on a Riemannian manifold is a condition that bridges the gap between positive sectional curvature and positive Ricci curvature.

In this poster, I will discuss an ongoing project with Miguel Domínguez-Vázquez, David González-Álvaro, and Jason DeVito, which aims to construct new examples of compact Riemannian manifolds with $\text{Ric}_2 > 0$. We achieve this by employing a certain generalisation of the "fat bundle" concept.