The action of Diff(M) on the space of psc metrics

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Abstract:

In 1974, Nigel Hitchin showed that the orbit map associated to the action of the diffeomorphism group of the sphere on the space of positive scalar curvature metrics on the sphere induces a nontrivial map on components provided that d=0,1(8). Hence, this map detects non-isotopic psc metrics.

In this talk, I will present a rigidity result for this action. Among other applications, it implies that the orbit map for the sphere is trivial in every other dimension bigger than 6, so Hitchin's detection result is the only possible one of this kind for high-dimensional spheres.

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