

The role of Seiberg-Witten theory in Riemannian geometry

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The Seiberg-Witten theory provides a smooth invariant, which can be used to distinguish homeomorphic, non-diffeomorphic, smooth structures. Fundamental work of LeBrun and others shows that it also has a deep impact on the metric properties of the 4-manifolds. We will discuss how obstructions to the existence of Einstein metrics arise, and how one can compute the Yamabe invariant for Kahler surfaces and some symplectic 4-manifolds.

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