Institut für Geometrie und Topologie

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Mirror of submanifolds and special holonomy

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Abstract: The Strominger-Yau-Zaslow conjecture suggests that it will be important to consider the special Lagrangian torus fibration for the study of mirror symmetry. I will first introduce the real Fourier-Mukai transform, which gives the explicit "mirror" correspondence on the trivial torus fibration. By this method, we can define notions for Hermitian connections on a Hermitian line bundle arising from submanifolds, such as the "mirror" volume. I will also explain that the "mirror" of a calibrated submanifold in a G_2 -manifold is also defined, and it indeed has similar properties to a calibrated submanifold (and a G_2 -instanton). I will state some recent results and problems about minimal connections, which are critical points of the "mirror" volume. A part of this talk is based on the joint work with Hikaru Yamamoto.



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