Institut für Geometrie und Topologie

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Rarita-Schwinger fields on manifolds with real Killing spinors

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Raum 7.530

Abstract: The Rarita-Schwinger equation is the relativistic field equation of spin-3/2 fermions describing the gravitino, the supersymmetric partner of the graviton. This equation was first introduced by Rarita and Schwinger in 1941. Rarita-Schwinger fields are solutions of this equation and defined as the kernel of the Rarita-Schwinger operator, which is a "spin-3/2 version" of the Dirac operator. Although Rarita Schwinger fields have recently been investigated mathematically, there are still many open about them.
In this talk, I introduce Rarita-Schwinger fields on manifolds with real Killing spinors, especially on nearly Kähler manifolds and nearly parallel G2 manifolds. If time permits, I will also discuss ideas about how to study Rarita-Schwinger fields on other manifolds with real Killing spinors, such as Sasaki-Einstein manifolds and 3-Sasaki manifolds.

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