

Instantons on Fano threefolds

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Abstract

The notion of mathematical instanton was originally introduced by Atiyah, Drinfeld, Hitchin and Manin to define the stable rank 2 vector bundles E on \mathbb{P}^3 having $c_1(E) = 0$ and such that $H^1(E(-2)) = 0$. Thereafter, the notion of instanton had been generalized to rank 2 vector bundles on other Fano varieties besides \mathbb{P}^3 . The aim of this talk is to present an even further generalization that extends the notion of instanton to non necessarily locally free sheaves of arbitrary rank on Fano 3-folds of Picard rank one. I will present the main features of these sheaves focusing in particular on the properties of instantons, and of their moduli, on Fano 3-folds of index 2.