Seminar: "Geometry&Physics@DFT"

Location : DFT Seminar Room
(Seminar Homepage) (Indico Page)

Date: Wednesday, September 30, 2015, 12:00 noon

Title: **The landscape of G-structures in eight-manifold compactifications of M-theory**

Speaker: **Dr. Calin Lazaroiu**
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Abstract: We consider spaces of "virtual" constrained generalized Killing spinors, i.e. spaces of Majorana spinors which correspond to "off-shell" s-extended supersymmetry in compactifications of eleven-dimensional supergravity based on eight-manifolds M. Such spaces naturally induce two stratifications of M, called the chirality and stabilizer stratification. For the case $s = 2$, we describe the former using the canonical Whitney stratification of a three-dimensional semi-algebraic set $\mathcal{P}$. We also show that the stabilizer stratification coincides with the rank stratification of a cosmooth generalized distribution $\mathcal{D}_0$ and describe it explicitly using the Whitney stratification of a four-dimensional semi-algebraic set $\mathfrak{P}$. The stabilizer groups along the strata are isomorphic with SU(2), SU(3), G_2 or SU(4), where SU(2) corresponds to the open stratum, which is generically non-empty. We also determine the rank stratification of a larger generalized distribution $\mathcal{D}$ which turns out to be integrable in the case of compactifications down to AdS_3.