



ICTS String Seminar

Title : Unitary Rigid Supersymmetry for the Chiral Graviton and Chiral Gravitino in de Sitter spacetime

Speaker : Vasileios Letsios (University of Mons, Belgium)

Date : Wednesday, 21 May 2025

Time : 3:30 PM (IST)

Abstract : It is commonly believed that a unitary supersymmetric quantum field theory (QFT) involving graviton and gravitino fields on fixed 4-dimensional de Sitter spacetime (dS₄) cannot exist due to known challenges associated with supersymmetry (SUSY) on spaces with positive cosmological constant. In this talk, we contradict this expectation by presenting a new unitary supersymmetric QFT on fixed dS₄ : the free supersymmetric theory of the chiral graviton and chiral gravitino fields. The theory overcomes the known obstacles to unitary global SUSY on de Sitter because the commutator between two SUSY transformations closes on the conformal algebra $so(4,2)$ rather than the de Sitter algebra $so(4,1)$. Crucially, the $so(4,2)$ symmetry is realised through unconventional conformal-like transformations. Based on joint work with Atsushi Higuchi: <https://arxiv.org/abs/2503.04515>.

Venue : Online

Zoom Link: <https://icts-res-in.zoom.us/j/88092766911?pwd=R3ZrVk9yeW96ZmQ4ZG9KRzVhenRKZz09>

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