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沖縄科学技術大学院大学

VISITING PROGRAM

TSVP TALK

Special Holonomy in Geometry and Physics

2026
THU. **Oct. 22**

15:00–16:00

HYBRID

L5D23, ZOOM



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Geometric spaces with Special Holonomy have been a topic of great interest in mathematics since Berger wrote down a classification of all the possible holonomy groups in 1955. These special geometries are also of great interest in String Theory - the paradigm that tries to unify the two modern Physics Theories of General Relativity and Quantum mechanics - which prescribes that the Universe can be modeled by a geometric space with 10 or 11 dimensions. The extra dimensions above four are compactified into a geometric space which has a special holonomy group. In this talk, we introduce spaces with special holonomy, provide examples and highlight its connections to other areas of mathematics and theoretical physics, such as algebra via the quaternions and octonions, and the aforementioned string theory. This talk is aimed at a general scientific audience.



ICMAT-CSIC

Izar Alonso Lorenzo

Izar Alonso Lorenzo is a postdoctoral researcher at the Mathematical Sciences Institute (ICMAT) of the Spanish National Research Council (CSIC), working on Differential Geometry. She specializes in the fields of special holonomy and higher dimensional gauge theory. She obtained her PhD at the University of Oxford in 2023 and has also worked as an Assistant Professor at Rutgers University before moving to Madrid.

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