

11th ALGA Meeting

Maresias, São Paulo, from 10/16 to 10/22.

Speaker: Damiano Testa (U. Warwick, England)

Title: The surface of cuboids and Siegel modular threefolds

Abstract: A perfect cuboid is a parallelepiped with rectangular faces all of whose edges, face diagonals and long diagonal have integer length. A question going back to Euler asks for the existence of a perfect cuboid. No perfect cuboid has been found, nor it is known that they do not exist. In this talk I will first compute the Picard group of the space of cuboids (joint with M. Stoll). Then, I will show that the space of cuboids is a divisor in a Siegel modular threefold, thus allowing to translate the existence of a perfect cuboid to the existence of special torsion structures in abelian surfaces defined over number fields.