



ODTU-Bilkent Algebraic Geometry

Free Group Action on Product of 3 Spheres

By

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Abstract: A long-standing Rank Conjecture states that if an elementary abelian p -group acts freely on a product of spheres, then the rank of the group is at most the number of spheres in the product. We will discuss the algebraic version of the Rank Conjecture given by Carlsson for a differential graded module M over a polynomial ring. We will state a stronger conjecture concerning varieties of square-zero upper triangular matrices corresponding to the differentials of certain modules. By the work on free flags in M introduced by Avramov, Buchweitz, and Iyengar, we will obtain some restriction on the rank of submodules of these matrices. By this argument we will show that $(\mathbb{Z}/2\mathbb{Z})^4$ cannot act freely on product of 3 spheres of any dimensions.

Date: 9 April 2021, Friday

Time: 15:40

Place: Zoom

To request the event link, please send a message to sertoz@bilkent.edu.tr