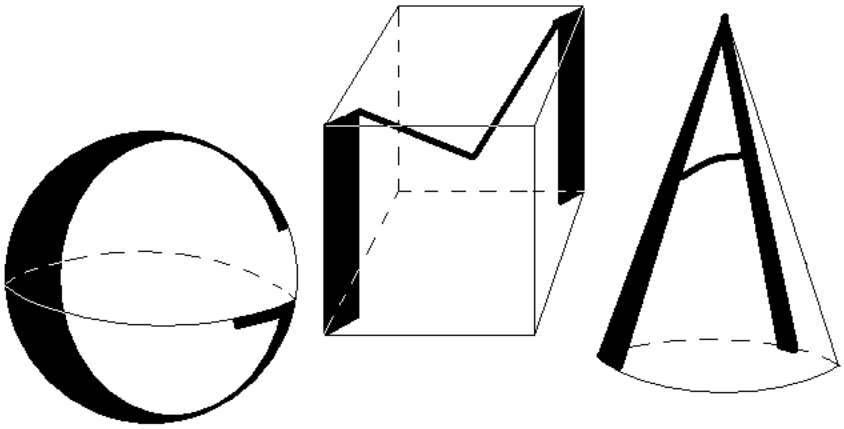

Colloquium

January 31, 4:05 p.m. (9^{th} Period)

(in the Atrium)

Speaker:Ekansh Jauhari

Title:Topology and robotics - a new approach to motion planning.

Abstract

Topological Complexity (TC) of a topological space X is the minimal degree of instability of motion planning algorithms for autonomous systems with configuration space X. In this talk, we'll see a new version of TC, denoted as dTC, which seems to fit better for motion planning for some advanced autonomous systems. Like TC, our new version dTC is also a homotopy invariant. Moreover, dTC has a corresponding homotopy-invariant analog, denoted as dcat, to the Lusternik-Schnirelmann category (cat). We'll also see some interesting computations for both dTC(X) and dcat(X) for various nice spaces X as well as compare them with TC(X) and cat(X). (Based on joint work with Dr. Alexander Dranishnikov)