Toplogy Seminar

Friday, 2018, February 23, 11:00-11:50 a.m., in DERR 334

Speaker: Prof. Tom Thickstun

Title: Homogeneity of the Pontryagin surface

ABSTRACT

A Pontryagin surface is roughly speaking a nowhere-Euclidean space which can be be "approximated" by closed orientable surfaces (the better the approximation required, the higher the genus of the approximating surface). A Pontryagin disk is, by definition, the closure of one of the two complementary components of a separating simple closed curve in a Pontryagin surface. Homogeneity of the the Pontryagin surface was established several years ago but the following theorem (which will be presented in this talk) is stronger than homogeneity.

Theorem (Daverman, Thickstun):
Any homeomorphism of the boundary of one Pontryagin disk to the boundary of another extends to a homeomorphism of the Pontryagin disks.

The proof is intricate but elementary.