



Analysis Seminar

AREA AND CO-AREA FORMULAS FOR MAPS INTO METRIC SPACES

By

Behnam Esmayli
(University of Pittsburgh, PA)

Abstract: Area and co-area formula are probably the two most fundamental integral geometric identities in differential geometry. The former is a generalization of the calculus formulas for the length of curves and area of surfaces, while the latter contains such theorems as Fubini's and integration in spherical coordinates.

These theorems, due to Federer, seem very Euclidean in that they depend on the notion of derivative. In a seminal paper from 1994, Kirchheim introduced a weaker notion of derivative for maps from Euclidean domains into arbitrary metric spaces and used it to prove the area formula for them. In this talk, I will review the above and then explain our new (and more geometric) proof of the much harder co-area formula for metric space targets, which was proven independently by Karmanova and Reichel circa 2009. (Joint work with Piotr Hajłasz.)

Date: 10 February, 2021

Time: 18:00-19:00, GMT+3.

Place: ZOOM

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