Many Cheerful Facts

Organizers: Yael Degany & Jason Ferguson

Friday, 2:10pm–3:00pm, 939 Evans

Apr. 23 Vinicius Gripp, UC Berkeley A Geometric Approach to the Exterior Derivative and Stokes' Theorem

Abstract: Have you ever wondered if there exists a more geometric definition of exterior derivative for which Stokes' Theorem doesn't look like magic? I will explain a way to do that, using a version of the Mean Value Theorem for differential forms. As a corollary, we'll be able to make sense of Stokes' Theorem for forms which are not necessarily C^1 and, in particular, give another proof of Cauchy's theorem in complex analysis.

I won't assume anything about manifolds. It will be useful to know multivariable calculus, including the definition of differential forms in Euclidean space. even though I will define it again.