BI-CO MATHEMATICS COLLOQUIUM

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"The Art of Integration by Parts (and why everybody should know this)"

Monday, October 21, 2013

Talk at 4:00 – Park 338
Tea at 3:30 – Park 355, Math Lounge

Abstract:

The Integration by Parts Formula, which is equivalent with the Divergence Theorem, is one of the most basic tools in Analysis. Originating in the works of Gauss, Ostrogradsky, and Stokes, etc., the search for an optimal version of this fundamental result continues through this day and these efforts have been the driving force in shaping up entire subbranches of mathematics, like Geometric Measure Theory.

In this talk, aimed at advanced undergraduate students and beginning graduate students in mathematics, I will review some of these developments (starting from elementary considerations to more sophisticated versions) and discuss some applications prefiguring the incipient stages of Partial Differential Equations/Boundary Value Problems. I will conclude with a recent result, regarding a sharp divergence theorem with non-tangential traces.

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