



Department of Mathematical Sciences

Seminar in Stochastic Systems

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Derivatives and Primitives

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Abstract: A very general Gauss-Green theorem can be obtained by differentiating certain additive functions defined on the family of all bounded BV sets. The process is invariant with respect to local homeomorphisms, and the resulting integration by parts formula can be used to study removable sets of singularities of Cauchy-Riemann, Laplace, and minimal surface equations. This approach to removable sets is remarkably simple and deals simultaneously with singularities involving both differentiability and continuity.

I will explain these results in an elementary fashion without assuming any familiarity with BV sets and functions.

Washek F. Pfeffer is born in Prague, Czech Republic, where he studied mathematics at Charles University. He received his PhD Degree from the University of Maryland, College Park. Dr. Pfeffer has worked at the Czechoslovak Academy of Sciences at Prague, at the Royal Institute of Technology in Stockholm, George Washington University, and at the University of California at Berkeley. Dr. Pfeffer is a member of the American and Swedish Mathematical Societies. He served on the Academic Board of the Center for Theoretical Study at Charles University. His primary research areas are analysis and topology. He has written the books *Integrals and Measures* (Marcel Dekker, 1977), *The Riemann Approach to Integration* (Cambridge University Press, 1993), and *Derivation and Integration* (Cambridge University Press, 2000).