



Department of Mathematical Sciences

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Colloquium Series

February 2, 2018 at 3pm in Bell Hall 143

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On Fixed Point Theory of Monotone Mappings

Metric Fixed Point Theory finds its roots in the famous Banach's Contraction Principle (1922 as early as 1429). The theorem is named after Stefan Banach (1892-1945). This theorem was known and used before. For example, in the study of differential equations, the Picard-Lindelof theorem (also known as Picard's existence theorem or Cauchy-Lipschitz theorem) is an important theorem on existence and uniqueness of solutions to first-order differential equations with given initial conditions. In this talk, I will discuss the extension given by Caristi that led also to Ekeland Variational Principle. I will explain the equivalence between Caristi and Ekeland. Then I will move to discuss the case of monotone mappings.

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