Invited Keynote Lecture

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Distance Revisited and an Application of the Brønsted Order

Abstract: In this talk, we will revisit the origin of the abstract definition of a distance. We will talk about the contributions of Frechet which led to the abstract current formulation of a distance given by Hausdorff in 1914. We will discuss the flaws with such abstract formulation and show how the correct abstract formulation is still eluding us. If time allows, we will discuss the Caristi's fixed-point theorem and its equivalence with the Ekeland's Variational Principle via the Brønsted Order. This discussion shows that the known assumptions in both theorems are not optimal.

Keywords: Distance; Caristi's Fixed-Point Theorem; Ekeland's Variational Principle; Brønsted Order.