Speaker: Diego Rojas

Title: Online Computability and Differentiation in the Cantor Space

Abstract: This paper investigates a notion of differentiation for functions on the Cantor space. We study the existence and complexity of this derivative, particularly for online and computable online functions. It is shown that a random online function has no derivative at any computable point. It is shown that if a computable online function F has derivative m>0 at a weakly 1-random point, then F has derivative m on a set of positive measure. We also explore the family of online functions on the Cantor space which represent real-valued functions.