



DEPARTAMENTO
DE ANÁLISIS
MATEMÁTICO Y
MATEMÁTICA
APLICADA



COLLOQUIUM DE ANÁLISIS MATEMÁTICO

Gerald Beer

California State University - Los Angeles

Transforming continuous functions into Lipschitz functions

Resumen:

Let (X, τ) be a metrizable topological space and let (Y, ρ) be a metric space. Let Ω be a family of bounded continuous functions from X to Y . We show that the family is Lipschitzian with respect to some compatible metric d on X if and only if the family can be written as a countable union of pointwise equicontinuous subfamilies. In this case, d can be chosen to be bounded. We present an example of a pointwise equicontinuous family of real-valued unbounded functions that fails to be Lipschitzian with respect to any compatible metric on the domain space where the target space is equipped with the Euclidean metric. From our positive result, we easily characterize those families of continuous functions between metrizable spaces that are Lipschitzian with respect to appropriately chosen metrics on the domain and target space, answering a question implicitly posed by S. Cobzaş, R. Miculescu and A. Nicolae in their recent monograph. This is joint work with Zvi Artstein of the Weizmann Institute, Rehovot, Israel.

**Organizado por el Departamento de Análisis Matemático y Matemática Aplicada
y el Instituto de Matemática Interdisciplinar (IMI)**

Fecha: Viernes 24 de junio de 2022

a las 11:30 horas

Lugar: Aula 222

Facultad de CC Matemáticas, UCM