

# Seminario de Geometría y Topología



## Bornologies and boundedness of continuous functions

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Abstract. Given a class of functions defined on a metric space  $(X,d)$  with values in perhaps different metric spaces, the family of subsets of  $X$  on which each function is bounded forms a bornology, that is a family of subsets that contains the singletons, is stable under finite unions, and that is hereditary. For example, the family of subsets on which each Lipschitz functions is bounded is clearly the  $d$ -bounded subsets. After some historical comments, we identify these bornologies for the class of continuous functions, the class of functions that map Cauchy sequences to Cauchy sequences, and the class of uniformly continuous functions. Remarkably, in each case the family is actually determined by a subclass of locally Lipschitz functions. (joint work with Maribel Garrido).

Lugar: Universidad Complutense de Madrid

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Fecha y Hora: Martes, 13 de mayo de 2014, 12:00

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