



## Jornada IMAC sobre Métodos Topológicos en Análisis

Universitat Jaume I

IMAC, TI1329DS, 16 de junio de 2016

### Programa:

#### •11:30 Aníbal Moltó (Universitat de València):

Some topological properties of a compact  $K$  that imply that the space  $C(K)$  has good renorming properties

Abstract:

We will consider some classes of compacta  $K$  for which  $C(K)$ , the Banach space of all continuous functions on  $K$ , admits an equivalent local uniformly rotund equivalent (LUR) norm or a Kadets one. It is well known that a Banach space  $(X, \|\cdot\|)$  with a LUR norm has the Kadets property that, in turn, implies that it has a countable cover by sets of small locally  $\|\cdot\|$ -diameter (SLD).

We will discuss the presence of these properties on  $C(K)$  for some classes of compacta  $K$  like Valdivia, Namioka–Phelps, some Alexandrov compactifications of trees and some distributive lattices that are compact for a topology for which the order is continuous.

#### •12:30 Helge Glöckner (Universität Paderborn, Germany):

Exponential laws in topology and analysis

Abstract:

If  $X$ ,  $Y$ , and  $Z$  are Hausdorff topological spaces and  $f: X \times Y \rightarrow Z$  is a continuous map, then  $\check{f}(x) := f(x, \cdot) \in C(Y, Z)$  for each  $x \in X$  and  $\check{f}: X \rightarrow C(Y, Z)$ ,  $x \mapsto \check{f}(x)$  is continuous with respect to the compact-open topology on  $C(Y, Z)$ . Moreover, the map

$$\Phi: C(X \times Y, Z) \rightarrow C(X, C(Y, Z)), \quad f \mapsto \check{f}$$

is a homeomorphism onto its image; if  $Y$  is locally compact or  $X \times Y$  is a  $k$ -space, then  $\Phi$  is surjective and hence  $\Phi$  is a homeomorphism.

In my talk, I recall this classical fact and describe variants for spaces of differentiable functions and applications in topology and analysis.

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