DEPARTAMENTO DE
GEOMETRÍA Y TOPOLOGÍA

Instituto de Matemática Interdisciplinar

Jornada sobre Grupos Topológicos

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1. "Locally Minimal Groups"

Lydia Aussenhofer

A Hausdorff group (G, τ) is called a locally minimal group if there exists a neighborhood U of 0 such that there is no strictly coarser Hausdorff group topology in which U is a neighborhood of 0.
Every locally compact group and every minimal group is locally minimal, but also every normed space. The setting of a normed space was generalized for abelian groups by Enflo, who called a Hausdorff group G a UFSS group (uniformly free from small subgroups) if for a suitable neighbourhood U of 0 the sets $((1/n)U)$ $n\in\mathbb{N}$ form a neighborhood basis where $(1/n)U = \{x\in G : x, 2x, \ldots, nx\in U\}$. Every UFSS group is locally minimal. We

characterized the unbounded abelian group G to be exactly those groups which admit a non-discrete UFSS group topology.
We call an abelian Hausdorff group G almost minimal if it has a closed, minimal subgroup N such that the quotient group is a UFSS group. Every almost minimal group is locally minimal. We proved that a complete, locally quasi–convex, locally minimal group is almost minimal and gave an example of a metrizable, precompact locally minimal group which is not almost minimal.

2. "Mackey Consistent Classes of Groups"

Vaja Tarieladze

A class G of MAP topological abelian groups will be called:

1. A UMAP-class if it has the following property: if G is an abelian group and τ_1, τ_2 are distinct group topologies in G such that (G, τ_1) and (G, τ_2) are in $\mathcal{G}$, then (G, τ_1)^ is not equal to (G, τ_2)^.
2. A Mackey consistent class if it has the following property: if $G\in\mathcal{G}$ and T is the set of all group topologies τ in G such that $(G, \tau)\in\mathcal{G}$ and (G, τ)^ = G^, then $(G, \sup T)$^ = G^.
3. A strictly Mackey consistent class if it has the following property: if $G\in\mathcal{G}$ and T is the set of all group topologies τ in G such that $(G, \tau)\in\mathcal{G}$ and (G, τ)^ = G^, then $(G, \sup T)$^ = G^ and $(G, \sup T)\in\mathcal{G}$.

We plan to discuss some examples UMAP, Mackey consistent and strictly Mackey consistent classes. We show that:

- The class PMAP of all Polish MAP groups is a UMAP class.
- A Mackey consistent class may not be strictly Mackey consistent.

We conjecture that every UMAP class is (strictly) Mackey consistent.
This talk is based on the following articles:

- M. J. Chasco, E. Martín-Peinador and V. Tarieladze, On Mackey Topology for groups, Stud. Math. 132, No.3, 257-284 (1999).
- D. Dikranjan, L. de Leo, E. Martín-Peinador and V. Tarieladze, Duality theory for groups revisited: g-barrelled, Mackey and Arens groups. Preprint, 2009.

Organizan: Departamento de Geometría y Topología, IMI - Instituto de Matemática Interdisciplinar y Proyecto Topologías de Mackey en diversas categorías de grupos topológicos.
Grupos pseudocompactos (MTM2009-14409-C02-02).

Fecha: 25 de marzo, de 16.00 a 17.00 (Conferencia 1) y de 17.30 a 18.30 (Conferencia 2)

Seminario 225 del Departamento de Geometría y Topología
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