

Lectures take place at the Institute of Mathematics and Statistics, No.8 building within the Faculty of Science, Kotlarska 2, Brno

The program is in progress, details will be published here regularly.

**Tuesday, March 27, 2012, at 17:00 in M3:**

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***Stability of group homomorphisms***

**Abstract:**

Informally, a property of objects of certain type is *stable* if every object, which approximately has this property in a sufficiently high degree, is already arbitrarily close to an object having that property.

In the lecture we will be dealing with the topic of stability of continuous homomorphisms between topological groups. We'll introduce the notions of stability with respect to the topology of uniform convergence and with respect to the topology of uniform convergence on compacts on the space of continuous mappings between a given pair of topological groups and indicate how they can be formulated in an intuitively more comprehensible way using the language of nonstandard analysis. We'll present an example showing that the stability property is not satisfied automatically. Then we'll formulate some conditions guaranteeing the stability of continuous homomorphisms and give further examples showing that they are indeed necessary. Applying the results on stability with respect to the topology of uniform convergence on compacts to discrete topological groups we'll obtain some results on extendability of finite partial mappings to homomorphisms. A particular attention will be paid to the stability of characters of locally compact abelian groups.