

1096-18-1963      **Gábor Lukács\*** (lukacs@topgroups.ca), Halifax, NS , Canada. *Duality of topological algebras and bornologies.*

This talk concerns extensions of well-known dualities of topological algebras: the Gelfand duality of commutative  $C^*$ -algebras, and the Pontryagin duality of locally compact abelian groups. A common feature of these extensions of classic dualities is that they use topological spaces equipped with a *bornology*, a notion modelled on bounded sets in metric spaces and relatively compact sets in a topological space.

It turns out that Gelfand duality extends to a duality between commutative pro- $C^*$ -algebras and  $k_R$ -spaces whose topology is determined by a bornology of (some, but not necessarily all) relatively compact sets, while Pontryagin duality extends to the category of topobornological abelian groups, which has nice categorical properties. (Received September 16, 2013)