BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

BANACH ALGEBRAIC GEOMETRY

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April 25, 2016, 4:00 – 5:00pm
Math/Computer Science, Room B19
111 Cummington Street, Boston

Tea: 3:45pm in Room 144

Abstract: I will present a 'categorical' way of doing analytic geometry in which analytic geometry is seen as a precise analogue of algebraic geometry. This approach works for both complex analytic geometry and p-adic analytic geometry in a uniform way. I will focus on the idea of an 'open set' and how it is characterized categorically. In order to do this, we need to study algebras and their modules in the category of Banach spaces. The categorical characterization that we need uses homological algebra in these 'quasi-abelian' categories of modules which is work of Schneiders and Prosmans. In fact, we work with the larger category of Ind-Banach spaces for reasons I will explain. This gives us a way to establish foundations of analytic geometry and to compare with the standard notions such as the theory of affinoid algebras, Grosse-Klonne's theory of dagger algebras (over-convergent functions), the theory of Stein domains and others. I will explain how this extends to a formulation of derived analytic geometry following the relative algebraic geometry approach of Toen, Vaquie and Vezzosi. Different parts of this talk are based on articles with Bambozzi and/or Kremnizer which are available on the arxiv.

See `http://math.bu.edu/research/geom/seminar.html` or contact Siu Cheong Lau *lau@math.bu.edu* for more information.