

ANALYSIS SEMINAR

October 26, 2012

**Speaker:** Nikolai Vasilevski (Cinvestav)

**Title:** Two-dimensional singular integral operators via poly-Bergman spaces, and Toeplitz operators with pseudodifferential symbols.

**Abstract:** We describe a direct and transparent connection between the poly-Bergman type spaces on the upper half-plane and the action of the certain two-dimensional singular integral operators.

We study then the  $C^*$ -algebra generated by Toeplitz operators acting on the Bergman space over the unit disk, whose pseudodifferential defining symbols belong to the algebra generated by the multiplication operators and the above two-dimensional singular integral operators (considered in the unit disk setting). As it turns out this Toeplitz algebra coincides with the algebra generated by Toeplitz operators with just functional symbols. At the same time, the generating Toeplitz operators for above two algebras possess quite different properties.