

Free noncommutative function theory: foundations, applications, and recent developments

Victor VINNIKOV

Mini course, October 3–7, 2016

Abstract

The purpose of this minicourse of 5 lectures is to give a tour of free noncommutative function theory that was first envisaged by Joseph L. Taylor in the early 1970s as a part of his fundamental work on noncommutative spectral theory and has been actively developed in the last decade by several research groups coming from different directions (multivariable operator theory, optimization with matrix variables, free probability).

Among the subjects that I plan to cover are (some of) the foundations of the theory; noncommutative kernels and their positivity, and noncommutative interpolation; and noncommutative rational functions and their realization theory.