İSTANBUL ANALYSIS SEMINARS

POLETSKY-STESSIN-HARDY SPACES IN THE PLANE

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Abstract: We give two characterizations of the Hardy spaces in the complex plane in the sense of Poletsky-Stessin: first we completely describe functions in these spaces by having a harmonic majorant with a certain growth condition. Second we describe these functions in terms of their boundary values as a weighted subclass of the usual L^p class with respect to the arclength measure on the boundary, when the boundary is C^2. We extend the classical result of Beurling which describes the invariant subspaces of the shift operator. Additionally we provide non-trivial examples. The talk should be understandable to anyone with a graduate level knowledge of complex variables in the plane. Joint work with Muhammed Ali Alan in Syracuse University.

Date: November 2, 2012
Time: 15:40
Place: Sabancı University, Karaköy Communication Center
Bankalar Caddesi 2, Karaköy 34420, İstanbul