

**SEMINARIO DE ANÁLISIS COMPLEJO  
(COMPLEX ANALYSIS SEMINAR)**

**Weighted composition operators: an axiomatic approach**

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**Resumen / Abstract:**

Weighted composition operators (WCO) are defined as a composition followed by multiplication. They are very natural and frequently studied objects in Complex Analysis and Operator Theory and are related to several fundamental questions in these areas.

In this joint work with Irina Arévalo, we consider WCOs acting on very general Banach spaces of analytic functions in the disk or other domains that satisfy only a minimum number of natural axioms.

Among the preliminary results, we discuss some implications of the basic axioms and identify all functional Banach spaces in which every bounded analytic function is a pointwise multiplier. Next, we characterize (in various ways) the weighted composition operators among the bounded operators on such spaces, thus generalizing some well-known results on multiplication or composition operators.

As a main result, we also characterize the invertible weighted composition operators on the disk and on general Banach spaces of analytic functions on bounded domains under different sets of axioms whose connections we discuss by providing appropriate examples. This generalizes and complements various recent results by Gunatillake, Bourdon, and Hyvärinen-Lindström-Nieminen-Saukko.