Composition Operators on Hardy Spaces of the Polydisk

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Let $\phi : U^n \to U^n$ be a holomorphic map. The linear composition operator induced by the symbol ϕ is defined by

$$C_\phi f = f \circ \phi$$

A recurring theme in the study of composition operators has been the search for function theoretic conditions on ϕ which guarantee the boundedness (resp. compactness and weak compactness) of C_ϕ on function spaces, in paticular Hardy spaces $H^p(U^n)$. For the history of the subject we refer the reader to the book "Composition Operators on Spaces of Analytic Functions" of C. Cowen and B. MacCluer.

The first part of my talk will be devoted to bacis features and notation in the study of composition operators. In the second part, I will present characterization of bounded (resp. compact and weakly compact) composition operators on $H^p(U^n)$.