

COMPOSITION OPERATORS ON SPACES OF ANALYTIC FUNCTIONS

HANS-OLAV TYLLI

Abstract: Composition operators having the form $f \mapsto f \circ \phi$, where ϕ is a given analytic self-map of the unit disk, were first systematically studied by Ryff (1966) and Nordgren (1968) on the classical Hardy space H^p of analytic functions in the unit disk. The starting point was the Littlewood subordination principle (1925) for subharmonic functions. Subsequently the research into properties of such composition operators on various Banach spaces of analytic functions has grown into an extensive and fascinating area (MS Classification 47B33).

I will review some aspects of the theory of composition operators, including qualitative and spectral properties as well as the connection to the invariant subspace problem, which are related to (in part) joint research at the department with, in varying combinations, Jussi Laitila, Pekka Nieminen, Eero Saksman and Riikka Schroderus.