



**Pamela GORKIN** (pgorkin@bucknell.edu), Department of Mathematics, Bucknell University, Lewisburg, PA 17837, USA, *Homotopic Composition Operators*.

ABSTRACT. For a self-map of the unit disk  $D$  and the Hardy space  $H^2$  Berkson showed that certain composition operators are isolated from all other composition operators (in the operator norm topology on  $H^2$ ). Shapiro and Sundberg studied this problem and posed several interesting related questions about composition operators on  $H^2$ . MacCluer, Ohno and Zhao studied these questions in a different setting: the composition operators were considered on the space of bounded analytic functions on the open unit disk,  $H^\infty(D)$ . They obtained necessary and sufficient conditions for such operators to be isolated. The question of when such operators are essentially isolated was answered by Hosokawa, Izuchi and Zheng using a certain type of interpolating sequence. In this talk we unify, simplify and extend these results by determining the path connected and essential path connected components of the set of composition operators on  $H^\infty$  of the ball in  $C^n$ . We use these same techniques to characterize the path components of endomorphisms of  $H^\infty$  on the disk, continuing research begun by Udo Klein.