

Banach Algebras 2009

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Blaschke products, Poncelet curves, and the Numerical Range

ABSTRACT. Every degree-three Blaschke product that maps the origin to itself can be associated in a unique way with an ellipse with foci at the nonzero zeros of the Blaschke product. We discuss the degree- n case as well as the situation for infinite Blaschke products. The answer to this question has implications to the study of numerical ranges of certain contractions as well as a well-known conjecture referred to as the Sendov conjecture, which studies where the critical points of a polynomial can be if the polynomial has all its zeros in the closed unit disc. This talk will include a discussion of joint work with J. R. Partington and I. Chalendar, as well as U. Daepf and K. Voss.