

Eric Bedford **Degree Growth of Birational Maps**

Let M_q denote the set of $q \times q$ matrices with complex entries, and let $\mathbf{P}(M_q)$ be the associated projective space of dimension $q^2 - 1$. Let J denote the birational involution defined by taking the reciprocals of the individual matrix entries: $J(a_{i,j}) = (a_{i,j}^{-1})$. Let I denote the birational involution defined by taking the matrix inverse, i.e., $I(A) = A^{-1}$. The composition $K = I \circ J$ is a birational map of $\mathbf{P}(M_q)$ of degree $(q^2 - 1)(q - 1)$. The mapping K , as well as related maps, have arisen in problems of renormalization in mathematical physics. In this talk we will discuss the problem of determining the degrees $\deg(K^n) = \deg(K \circ \cdots \circ K)$ of the iterates for $n = 1, 2, 3, \dots$. This is joint work with K.H. Kim.