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Determinant Functions and the Geometry of the Flag Manifold for SU(p,q)

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Abstract. Let $G_0 = \mathrm{SU(p,q)}$ with $q \leq p$, $K_0 = \mathrm{S(U(p) \times U(q))}$ a maximal compact subgroup, and let G, K be their complexifications. Finally, let B be a Borel subgroup of G. We define a number of algebraic functions on $G/B \times G/K$ and use them to describe the closures of codimension one K orbits of the flag manifold G/B. We show how the underlying geometry of the flag manifold interacts with these functions. In particular, we shall use these functions to construct a Stein extension of the Riemannian symmetric space G_0/K_0, whose connected component turns out to be the space of linear cycles in most cases.

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