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Ian F. Blake* (ifblake@ece.ubc.ca), Dept. Elec. Comp. Eng., University of British Columbia, Vancouver, BC , Canada, **Kumar Murty** (murty@math.toronto.edu), Dept. Mathematics, University of Toronto, Toronto, ON , and **Hamid Usefi** (usefi@mun.ca), Dept. Math. and Stat., Memorial University, St. John's, NL. *Rational points and codes on Hermitian surfaces.*

Given the success of constructing error correcting codes with good parameters on algebraic curves, it is natural to consider the generalization to codes on algebraic surfaces. This generalization has so far failed to produce codes with improved parameters. The problem appears to be to find a surface, whose points parameterize the code positions, together with a suitable collection of multivariate polynomials. A polynomial produces a codeword by its evaluation at the points on the surface. The relationship between the set of points and set of polynomials in order to produce a code with improved parameters, is unclear at this point. This work considers the set of points on a Hermitian surface of dimension m over the finite field \mathbb{F}_q , $q = r^2$. An expression for the zeta function of this surface is obtained as well as the generating function for a given field. The enumeration of certain subsets of points on the surface are also considered. It is hoped the subsets will prove to be of interest for code construction, which is yet to be determined. (Received November 30, 2011)