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Greg Knese* (geknese@math.wustl.edu), Washington University in St. Louis, Department of Mathematics, One Brookings Drive, Campus Box 1146, St. Louis, MO 63105. *Determinantal representations of semi-hyperbolic polynomials.*

We prove a generalization of the Hermitian version of the Helton-Vinnikov determinantal representation of hyperbolic polynomials to the class of semi-hyperbolic polynomials, a strictly larger class, as shown by an example. We also prove that certain hyperbolic polynomials affine in two out of four variables divide a determinantal polynomial. The proofs are based on work related to polynomials with no zeros on the bidisk and tridisk. (Received September 16, 2013)