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**June Huh\*** (junehuh@umich.edu), 512 Walnut St. #11, Ann Arbor, MI 48104. *The maximum likelihood degree of a very affine variety.*

We show that the maximum likelihood degree of a smooth very affine variety is equal to the signed topological Euler characteristic. This generalizes Orlik and Terao's solution to Varchenko's conjecture on complements of hyperplane arrangements to smooth very affine varieties. For very affine varieties satisfying a genericity condition at infinity, the result is further strengthened to relate the variety of critical points to the Chern-Schwartz-MacPherson class. The strengthened version recovers the geometric deletion-restriction formula of Denham, Garrounian, and Schulze for arrangement complements, and generalizes Kouchnirenko's theorem on the Newton polytope for nondegenerate hypersurfaces. (Received August 24, 2012)