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Michael Shub* (shub.michael@gmail.com), 40 St George Street, Toronto, ON M5S 2E4, Canada. *Bezout's Theorem and Complexity: Geometry, Topology and the Condition Number*. Preliminary report.

We study the smooth points in the solution variety. Our main tools are to study the condition Riemann structure and the smooth Frobenius condition number as an equivariant Morse Function. The topology of the variety is surprisingly simple. The geodesics are surprisingly short.

This is joint work with Carlos Beltran, Jean-Pierre Dedieu and Gregorio Malajovich. (Received January 16, 2008)