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Zhonggang Zeng* (zzeng@neiu.edu), Department of Mathematics, Northeastern Illinois University, 5500 St. Louis Avenue, Chicago, IL 60625. *Sensitivity of Algebraic Computation with Approximate Data.*

Sensitivity and its measurement are among the basic issues in numeric computation. Hypersensitivity frequently occurs in algebraic computing problems. By proper reformulation of the underlying problem, however, those so-called ill-conditioned or ill-posed problems can often be regularized with manageable sensitivity. In this talk, we analyze the sensitivity of several fundamental problems in algebraic computation such as polynomial division, linear system, polynomial GCD/root-finding, and eigenvalue calculation. Regularization strategies and computing results will also be presented. (Received September 29, 2005)