1003-49-1635 **M. Zuhair Nashed*** (`znashed@mail.ucf.edu`), Department of Mathematics, University of Central Florida, Orlando, FL 32816-1364. *Slant Differentiability for Nonsmooth Operators and Applications to Operator Equations and Variational Inequalities.* Preliminary report.

The concept of "slant differentiability" for nonsmooth operators was introduced by X.Chen, Z.Nashed, and L.Qi[SIAM J. Numer. Anal., vol. 38 (2000),1200 -1216]. This concept and variants thereof have been used by the authors and and several other authors for smoothing methods and semismooth methods for nondifferentiable operator equations, control theory, and Newton-like methods. In this paper we develop further properties of smooth differentiability and provide new applications to ill-posed opertaor equations and variational inequalities involving nonsmooth operators. (Received October 05, 2004)