1043-49-172 **Zsolt Páles** and **Vera M Zeidan*** (`zeidan@math.msu.edu`), Department of Mathematics, Michigan State University, East Lansing, MI 48824. *Co-Jacobian for Locally Lipschitz Functions in Infinite Dimension.*

Let X, Y be normed spaces , $\mathcal{D} \subseteq X$ be open and $f : \mathcal{D} \to Y$ be locally Lipschitz at p. In this talk the *co-Jacobian* of f at p, $\partial^* f(p)$, will be defined as a certain subset of *linear operators* from Y^* to X^*. When the space $L(Y^*, X^*)$ is equipped with a certain topology, $\partial^* f(p)$ enjoys nice properties including the nonemptiness. In addtion to presenting characterization of the co-Jacobian, connections with known derivative notions will be given. Such notions are: the Generalized Jacobian that extends Clarke's Jacobian, a type of Thibault limit set and of Ioffe's fan derivative, and Mordukhovich coderivatives. Furthermore, a smooth-nonsmooth and a nonsmooth -smooth chain rules will be provided. (Received August 26, 2008)