Elena Constantin* (constane@math.ohiou.edu), Ohio University, Department of Mathematics, 321 Morton Hall, Athens, OH 45701. An Applications of Higher Order Tangent Cones to Flow-invariance. Preliminary report.

The goal of this talk is to give some necessary and sufficient conditions for the flow-invariance of a subset $S = G^{-1}(0) = \{x \in X, G(x) = 0\}$ of a Banach space $X$ with respect to the $n$-th order autonomous differential equation

$$u^{(n)} = F(u(t)), \ t \geq 0,$$

where $G : U \to \mathbb{R}^m, m \geq 1,$ is a $n$ times Fréchet differentiable mapping on an open subset $U$ of $X, n \geq 3,$ and $F : U \to X$ is a locally Lipschitz mapping. (Received October 01, 2004)