

**Meeting:** 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-34-937      **Elena Constantin\*** ([constane@math.ohiou.edu](mailto: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  $G : U \rightarrow \mathbb{R}^m$ ,  $m \geq 1$ , is a  $n$  times Fréchet differentiable mapping on an open subset  $U$  of  $X$ ,  $n \geq 3$ , and  $F : U \rightarrow X$  is a locally Lipschitz mapping. (Received October 01, 2004)