1020-49-121 **Ilya A Shvartsman*** (shvartia@muohio.edu) and **Richard B Vinter**. *On Regularity of Optimal Controls for State Constrained Problems.*

In this work we report new results on the regularity of optimal controls for dynamic optimization problems with functional inequality state constraints, a convex time-dependent control constraint and a strongly convex cost function. Recently it has been shown that the linear independence condition on active state constraints, present in the earlier literature, can be replaced by a less restrictive, positive linear independence condition, that requires linear independence merely with respect to non-negative weighting parameters, provided the control constraint set is independent of the time variable. We show that, if the control constraint set, regarded as a time dependent multifunction, is merely Lipschitz continuous with respect to the time variable, then optimal controls can fail to be Lipschitz continuous. In these circumstances, however, a weaker Holder continuity-like regularity property can be established. On the other hand, Lipschitz continuity of optimal controls is guaranteed for time varying control sets under a positive linear independence hypothesis, when the control constraint sets are described, at each time, by a finite collection of functional inequalities. (Received August 22, 2006)