1098-90-93 **David E Stewart*** (david-e-stewart@uiowa.edu), Department of Mathematics, University of Iowa, Iowa City, IA 52242. *Uniqueness of solutions to dynamic complementarity problems.*

Dynamic complementarity problems have the form $K^* \ni w(t) \ \perp \ z(t) \in K$ where $K$ is a closed convex cone and $K^*$ is its dual cone (typically $K = K^* = \mathbb{R}^n_+$), and there is some dynamic relationship between $w(t)$ and $z(t)$ such as a differential equation. There is theory which shows when existence and uniqueness of solutions can be expected based on the *index* of the relationship between $z(\cdot)$ and $w(\cdot)$ similar to the index of differential algebraic equations. Sometimes the dynamics are best expressed through a convolution: $w(t) = (m * z)(t) + q(t)$. In these cases the index does not need to be an integer. While a satisfactory existence theory has been developed for these problems, up until recently the uniqueness theory has not been satisfactory for index between one and two. (Received January 14, 2014)