

**Meeting:** 1004, Bowling Green, Kentucky, SS 3A, Special Session on Dynamic Equations on Time Scales and Applications

1004-39-57            **Qin Sheng\*** (qsheng@udayton.edu), 300 College Park, Dayton, OH 45469-2316. *A continuing approach of the diamond- $\alpha$  dynamic derivatives.* Preliminary report.

Different dynamic derivatives have been playing a central role in the theory and applications of time scales. Recent discussions of the combined dynamic derivatives, in particular the diamond- $\alpha$  derivatives, have promised more feasible approximation formulae for computational applications. This talk will continue the exploration of the diamond- $\alpha$  dynamic derivatives. We will show that they are not only well-defined dynamic derivatives, but also provide interesting features in applications. Some numerical experiments and verifications will also be provided. (Received January 14, 2005)