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Abstract

**Introduction to Time Scales**

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 The theory of time scale which goes back to its founder *Stefan Hilger* [S. Hilger, Ph.D. Thesis, Würzburg University, 1988] is an area of mathematics that has recently received a lot of attention. The motivation of this subject is to unify discrete and continuous analysis, i.e. to build general theory for both domains, the real domain $R and the discrete domain Z$. For example, the dynamic equations on time scales $T$ involve both the differential equations if $T=R $ and the difference equations $if T=Z.$

 This research is intended to be an introduction to time scale. Mainly it is concerned with the basic concepts and results of the time scale calculus. Indeed, we study the concepts of jump operators on time scale$ T$. Then the basic theory of differentiation and integration on a general time scale$ T$ is considered. Several examples are given, with special care for the frequent domains $R and Z.$