PREFACE

The theory of time scales, which has recently received a lot of attention, was introduced by Stefan Hilger in his PhD thesis in 1988. Behind the main motivation for the subject lies the key concept that dynamic equations on time scales is a way of unifying and extending continuous and discrete analysis. The subject of dynamic equations on time scales continues to be a rapidly growing area of research. In particular the publication of the monograph *Dynamic Equations on Time Scales: An Introduction with Applications* by M. Bohner and A. Peterson in 2001 attracted more attention to this field, and recently two special sessions have been organized by M. Bohner and B. Kaymakçalan in order to bring together the frontier developments in the areas of "Dynamic Equations of Time scales" (Joint Meetings in San Diego, January 2002 and Spring Southeastern Section Meeting in Atlanta, March 2002). Several speakers of these sessions have contributed to this special issue, thereby not only enabling a new source for the recent developments in time scales to become apparent, but also with inclusions of several papers which are not necessarily in the time scales area, rather broadening the scope of the issue to include "Difference, Differential, and Dynamic Equations" under the same title. In some sense, this volume serves as a combined proceedings of the two special sessions devoted to "Dynamic Equations on Time Scales".

In the area of "Dynamic Equations on Time Scales", in this volume, D. R. Anderson and J. Hoffacker present Green's function for an even order mixed derivative problem, S. Bodine and D. A. Lutz give results related to the asymptotic behavior of exponential functions, whereas M. Bohner and G. Sh. Guseinov introduce improper integrals, and V. Cormani illustrates Liouville's formula. In addition, P. W. Eloe and Q. Sheng, T. Gard and J. Hoffacker, B. D. Haile and L. M. Hall, J. Henderson and W. K. C. Yin, R. Hilscher and P. Řehák, B. Kaymakçalan and B. A. Lawrence, K. R. Messer, and M. Sambandham contribute with time scales results such as cross symmetry of solutions, asymptotic behavior of natural growth, polynomial and series solutions, two and three-point problems for fourth order equations, Riccati inequality, disconjugacy, and reciprocity principle for linear Hamiltonian systems, quasilinearization for a nonlinear initial value problem, a second-order self-adjoint equation, and hybrid fuzzy systems.

Other contributions to the volume in the theme of "Difference, Differential, and Dynamic Equations" include the papers of R. P. Agarwal, B. C. Dhage and D. O'Regan, S. Clark and D. Hinton, K. Ey and A. Ruffing, S. Day, and A. Schelling. The interactions between the "Dynamic Equations" audience and the general "Difference, Differential, and Dynamic Equations" public proves to be very fruitful.

Finally, we would like to thank Professor M. Sambandham for not only in participating and delivering talks at both of the above mentioned special sessions, but also proposing to edit this special issue. This very timely contribution, along with the recent inclusion to the mathematical arena of M. Bohner and A. Peterson's second book, *Advances in Dynamic Equations on Time Scales*, which just appeared, will surely reinforce the emphasis and bring out the frontiers in this very active area of research of "Dynamic Equations on Time Scales".

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