



“Dynamic Equations on Time Scales — Seminar”, WS 2010/11.

Meeting Time:

Office Hour: Wednesday 10–12 in He225 and by appointment.

Web Site: The web site for this class is “<http://web.mst.edu/~bohner/tss-10/tss.html>”.

Text: “Dynamic Equations on Time Scales. An Introduction with Applications” by Martin Bohner and Allan Peterson, Birkhäuser, 2001.

Description: Students will present recent research papers, many of them related to applications in economics and finance. For a list of possible papers, see below.

Requirements: Each student should give one presentation and attend all other presentations in order to pass the course.

References:

1. R. P. Agarwal, M. Bohner, D. O'Regan, and A. Peterson. Dynamic equations on time scales: A survey. *J. Comput. Appl. Math.*, 141(1-2):1–26, 2002. Special Issue on “Dynamic Equations on Time Scales”, edited by R. P. Agarwal, M. Bohner, and D. O'Regan. Preprint in Ulmer Seminare 5.
2. E. Akin-Bohner and M. Bohner. Miscellaneous dynamic equations. *Methods Appl. Anal.*, 10(1):11–30, 2003.
3. F. M. Atıcı, D. C. Biles, and A. Lebedinsky. An application of time scales to economics. *Math. Comput. Modelling*, 43(7-8):718–726, 2006.
4. F. M. Atıcı and C. S. McMahan. A comparison in the theory of calculus of variations on time scales with an application to the Ramsey model. *Nonlinear Dyn. Syst. Theory*, 9(1):1–10, 2009.
5. F. M. Atıcı and F. Uysal. A production-inventory model of HMMS on time scales. *Appl. Math. Lett.*, 21:236–243, 2008.
6. M. Bohner, G. Gelles, and J. Heim. Multiplier-accelerator models on time scales. *Int. J. Stat. Econ.*, 4(S10):1–12, 2010.
7. M. Bohner and G. M. Gelles. Dynamic risk aversion and risk vulnerability. 2010. Submitted.
8. M. Bohner and M. Göggel. Closed-form solutions to discrete-time portfolio optimization problems. 2010. Submitted.
9. M. Bohner and J. Heim. Cobweb models on time scales. 2010. Submitted.
10. M. Bohner, J. Heim, and A. Liu. Solow models on time scales. 2010. Submitted.
11. M. Bohner and A. Peterson. First and second order linear dynamic equations on time scales. *J. Differ. Equations Appl.*, 7(6):767–792, 2001. On the occasion of the 60th birthday of Calvin Ahlbrandt.
12. M. Bohner and A. Peterson. Laplace transform and Z-transform: Unification and extension. *Methods Appl. Anal.*, 9(1):151–157, 2002. Preprint in Ulmer Seminare 6.
13. M. Bohner and S. Sanyal. The stochastic dynamic exponential and geometric Brownian motion on isolated time scales. *Commun. Math. Anal.*, 8(3):120–135, 2010.
14. M. Bohner and Y. Zheng. Analytical solutions of the Black–Scholes equation. *Appl. Math. Lett.*, 22:309–313, 2009.
15. C. C. Tisdell and A. Zaidi. Basic qualitative and quantitative results for solutions to nonlinear dynamic equations on time scales with an application to economic modelling. *Nonlinear Anal.*, 68(11):3504–3524, 2008.