

NUMBER THEORY SEMINAR

Stern polynomials and continued fractions

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WHEN: Wed 21 Sep 2011, 3:30 p.m.

WHERE: Chase 319

ABSTRACT:

The Stern (diatomic) sequence is a little-known but fascinating and important sequence of positive integers. In this talk I define a polynomial analogue of the Stern sequence and derive various identities. I then define two subsequences of these polynomials and obtain various properties for these two interrelated subsequences which can be seen as extensions or analogues of the Fibonacci numbers. I also define two analytic functions as limits of these sequences. As an application we obtain evaluations of certain finite and infinite continued fractions whose partial quotients are doubly exponential. In a case of particular interest, the set of convergents has exactly two limit points.

Any questions, please e-mail: rnoble@mathstat.dal.ca.