

Sylvester Institute for Mathematics, Computing, and Application (SIMCA)
The Johns Hopkins University

SIMCA COLLOQUIUM

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111 Mergenthaler Hall
4:00 p.m.

A NONLINEAR PDE MODEL FOR LAKES AND RIVERS

ABSTRACT

I will briefly discuss some simple (and not-so-simple) nonlinear PDEs describing growing “sand-piles”. I will then introduce a new nonlinear PDE that in an asymptotic limit models the formation of “lakes” and “rivers” resulting from rainfall over a fixed landscape.

These toy equations illustrate the serious point that interesting phenomena often appear when we let the parameters in PDEs approach infinity.