

Meeting: 1003, Atlanta, Georgia, SS 28A, AMS-SIAM Special Session on Reaction Diffusion Equations and Applications, I

1003-65-107 **Jianguo Liu*** (liuj@math.tamu.edu), Department of Mathematics, Texas A&M University, College Station, TX 77843-3368, and **Juergen Geiser** and **Richard E. Ewing**. *Operator Splitting Methods for Convection Dominated Reaction-Diffusion Equations*. Preliminary report.

Convection diffusion equations with nonlinear reaction describe bio-remediation for groundwater pollution and many other interesting phenomena. We shall discuss some qualitative properties of exact solutions to such equations. Then we establish operator splitting schemes for boundary initial value problems to these equations. Numerical results and implementation strategies will be presented to show the accuracy and efficiency of our methods. (Received August 07, 2004)