1126-35-408   **Vince J. Ervin** (`vjervin@clemson.edu`), Clemson University, Department of Mathematical Sciences, Martin Hall O-110, Box 340975, Clemson, SC 29634, and **Javier Ruiz-Ramírez*** (`javier@clemson.edu`), Clemson University, Department of Mathematical Sciences, Martin Hall O-110, Box 340975, Clemson, SC 29634. *Stokes-Darcy flow with deposition.*

As a model for a filtration process, in this presentation we discuss a Stokes-Darcy fluid flow problem, coupled with a deposition equation in the porous (Darcy) domain. The deposition changes the porosity of the porous domain which in turn affects the fluid flow.

Existence and uniqueness for the modeling equations (Stokes+Darcy+Deposition) is established. Numerical simulations are presented which investigate how the initial distribution of porosity in the Darcy flow influences the overall performance of the filter. (Received January 18, 2017)