1106-65-368 **Marina Moraiti*** (mmoraiti@gmail.com), The Dietrich School of Arts and Sciences, 301 Thackeray Hall, Pittsburgh, PA 15260. *Coupled groundwater-surface water flow: effect of small parameters and numerical methods.*

We study the effect of small parameters in the fully evolutionary Stokes-Darcy problem that models the interaction between groundwater and surface water flows. In particular, we look at the effect of the specific storage parameter as it approaches zero as well as at its effect, along with the hydraulic conductivity parameter, on stability and convergence properties of numerical schemes. Further, we present a new numerical method for the coupled problem that is strongly stable - uniformly in all parameters - and second order convergent in space and time. (Received August 25, 2014)