1126-65-197 **Maxim Olshanskii*** (molshan@math.uh.edu), University of Houston, 651 PGH, Houston, TX 77204. *A hybrid finite volume - finite element method for bulk-surface coupled problems.*

In the talk we discuss a hybrid method for solving a system of advection-diffusion equations in a bulk domain coupled to advection-diffusion equations on an embedded surface. A monotone nonlinear finite volume method for equations posed in the bulk is combined with a trace finite element method for equations posed on the surface. In our approach, the surface is not fitted by the mesh and is allowed to cut through the background mesh in an arbitrary way. As an example of an application, we consider the modeling of contaminant transport in fractured porous media. One standard model leads to a coupled system of advection-diffusion equations in a bulk (matrix) and along a surface (fracture). The method demonstrates great flexibility in handling curvilinear or branching lower dimensional embedded structures. (Received January 13, 2017)