Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

**Numerical modeling and simulation of flow through porous fabric surface** ZHENG GAO, XIAOLIN LI, Stony Brook University — We designed a numerical scheme to model the permeability of the fabric surface in an incompressible fluid by coupling the projection method with the Ghost Fluid Method in the front tracking framework. The pressure jump condition is obtained by adding a source term to the Poisson's equation in the projection step without modifications on its coefficients. The numerical results suggest that this approach has the ability to reproduce the relationship between pressure drop and relative velocity observed in the experiments. We use this algorithm to study the effects of porosity on the drag force and stability of parachutes during its inflation and deceleration.

Zheng Gao
Stony Brook University

Date submitted: 03 Nov 2015 Electronic form version 1.4