Abstract Submitted
for the DFD12 Meeting of
The American Physical Society

Inertial particle transport from peat moss vortex rings SAMUEL WHITEHEAD, EMILY CHANG, DWIGHT WHITAKER, Pomona College — We present a numerical analysis of how vortex rings from *Sphagnum* moss disperse their spores. Comparisons of the results of our CFD model with data measured from high-speed video reveal that the pressure inside the capsules is only 2 atm, which is significantly less than has been reported in the literature. Moreover vortex rings produced by these pressures do not optimize the impulse to the fluid as is seen in other biological systems. Here we present an analysis of the efficiency with which vortex rings from *Sphagnum* transport spores to heights where they can be carried by wind currents. Spore trajectories determined from a modified Maxey-Riley equation form a dynamical system for which we find the Lagrangian coherent structures (LCS), which define regions where spores are entrained in the vortex bubble. By analyzing the dependence of the LCS on spore size, capsule pressure, and morphology we will assess the efficiency with which vortex rings from *Sphagnum* transport spores.

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Date submitted: 09 Aug 2012 Electronic form version 1.4