

Abstract Submitted
for the DFD15 Meeting of
The American Physical Society

Magnetohydrodynamics of Vesicles DAVID SALAC, University at Buffalo SUNY — Lipid molecules are known to have an anisotropic magnetic susceptibility. When a lipid vesicle is exposed to a magnetic field, this anisotropy induces forces which drag the vesicle and the surrounding fluid into motion. Here a new model of a three-dimensional vesicle in the presence of magnetic fields is presented. The model is based on a novel level-set/projection method which enforces volume and surface area conservation simultaneously. The force on the vesicle membrane due to the applied magnetic field will be shown. The simulated dynamics will be compared to experimental results and future possibilities of combining electric and magnetic fields will be discussed.

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Date submitted: 29 Jul 2015

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