

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

Sorting Category: 12.7.12 (E)

**Inside a Ball of Crumpled Aluminum Foil**<sup>1</sup> ANNE DOMINIQUE CAMBOU, NARAYANAN MENON, UMass Amherst — We have studied the three-dimensional geometry of a crumpled sheet via x-ray CT scans. We crumple circular sheets of aluminum with thicknesses of  $30\text{--}50\mu\text{m}$  and diameter  $100000\mu\text{m}$  into spherical balls of diameter  $15000\mu\text{m}$  to  $20000\mu\text{m}$ . We then perform CT scans with a resolution of  $6\mu\text{m}^3/\text{voxel}$ . This allows us to fully resolve the conformation of the sheet. We use the reconstructed CT images to determine the mass distribution inside the crumpled ball. We also report on a box-counting analysis to assess the fractal nature of the mass distribution.

<sup>1</sup>We acknowledge financial support from NSF-DMR 0606216 and NSF-CBET 0609107

Prefer Oral Session  
 Prefer Poster Session

Anne Dominique Cambou  
dominique@physics.umass.edu  
UMass Amherst

Date submitted: 27 Nov 2007

Electronic form version 1.4