

Abstract Submitted  
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**Digital Reconstruction of 3D Polydisperse Dry Foam** A. CHIECO, K. FEITOSA, Dept. of Physics and Astronomy, James Madison University, A.E. ROTH, P.T. KORDA, D.J. DURIAN, Dept. of Physics and Astronomy, University of Pennsylvania — Dry foam is a disordered packing of bubbles that distort into familiar polyhedral shapes. We have implemented a method that uses optical axial tomography to reconstruct the internal structure of a dry foam in three dimensions. The technique consists of taking a series of photographs of the dry foam against a uniformly illuminated background at successive angles. By summing the projections we create images of the foam cross section. Image analysis of the cross sections allows us to locate Plateau borders and vertices. The vertices are then connected according to Plateau's rules to reconstruct the internal structure of the foam. Using this technique we are able to visualize a large number of bubbles of real 3D foams and obtain statistics of faces and edges.

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