

Abstract Submitted
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Finite Element Method Calculations on Statistically Consistent Microstructures of PBX 9501. ERIC MAS, BRAD CLEMENTS, , AXINTE IONITA, Los Alamos National Laboratory — We have used data from image analysis to guide us in creating a finite element mesh of PBX 9501. Information about the binder concentration at different length scales taken from micrographs allow us to create a mesh which naturally incorporates inhomogeneities of the microstructure in a manner which is statistically consistent with the observed microstructure. We then apply constitutive models which are consistent with the different binder concentrations and run finite element simulations. We will present our technique for incorporating the image analysis information into the mesh, our mechanical models, and results of the simulations.

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