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High-pressure Carbon Strength Model: first guess¹ DANIEL OR-LIKOWSKI, Lawrence Livermore National Laboratory, University of California — In support of National Ignition Facility experiments, there have been several sets of laser compression experiments performed at JANUS and OMEGA measuring the hugoniot of diamond phase carbon. In conjunction with those experiments, a theoretical effort to calculate, using robust density function theory (DFT), the equation of state (EOS) (A. Correa and L. Benedict) has also been performed. However, historically an adequate strength model is difficult to develop, due to a lack of data in general. Here, we give a simple interpretation of the experiments to develop a Steinberg-Guinian-like model based upon experimental observations and DFT calculations of the elastic moduli. We discuss this model and it comparision to particle velocity histories.

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