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Ductile damage evolution in high purity copper Taylor impact test NICOLA BONORA, ANDREW RUGGIERO, GIANLUCA IANNITTI, University of Cassino, Italy — Recently, the continuum damage mechanics model proposed by Bonora (Eng. Frach. Mech., 58, 1997) has been updated to account for stress triaxiality effect on model parameters,(Bonora et al., Proc. SCCM 2009). This model enhancement allows to predict ductile damage initiation under varying stress states (uniaxial stress, uniaxial strain, and complex load paths) and dynamic loading conditions. In this work, the model has been used to predict the minimum impact velocity for damage initiation in Taylor impact test. The material investigated in this study is high purity copper with different grain size. Taylor impact tests have been performed at different velocities with the gas-gun facility at the University of Cassino. Evidence of damage development has been given by means of fractographic analysis. Damage spatial distributions along the cylinder axis and across the section have been compared with numerical results

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