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**Constitutive Behavior Modelling of AA1100-O AT Large Strain and High Strain Rates.** GABRIEL TESTA, GIANLUCA IANNITTI, ANDREW RUGGIERO, DOMENICO GENTILE, NICOLA BONORA, University of Cassino and Southern Lazio — Constitutive behavior of AA1100-O, provided as extruded bar, was investigated. Microscopic observation showed that the cross-section has a peculiar microstructure consisting in the inner core with a large grain size surrounded by an external annulus with finer grains. Low and high strain rates tensile tests were carried out at different temperature ranging from -190 °C to 100 °C. Constitutive behavior was modelled using a modified version of Rusinek & Klepaczko model. Parameters were calibrated on tensile test results. Tests and numerical simulations of symmetric Taylor (RoR) and dynamic tensile extrusion (DTE) tests at different impact velocities were carried out in order to validate the model under complex deformation paths.

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