

Abstract Submitted  
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**ZrCuAl Bulk Metallic Glass spall induced by laser shock.** BENJAMIN JODAR, DIDIER LOISON, Institute of Physics of Rennes, UMR CNRS 6251, Rennes, France, YOSHIHIKO YOKOYAMA, Institute for Material Research, Tohoku University, Sendai, Japan, EMILIE LESCOUTE, CEA/DAM/DIF, Arpa-jon, France, LAURENT BERTHE, PIMM UMR CNRS 8006, Paris, France, JEAN-CHRISTOPHE SANGLEBOEUF, Institute of Physics of Rennes, UMR CNRS 6251, Rennes, France — To face High Velocity Impacts, the aerospace industry is always seeking for innovative materials usable as debris shielding components. Bulk Metallic Glasses (BMG) revealed interesting mechanical properties in case of static and quasi-static loading conditions: high elasticity, high tenacity, low density and high fracture threshold... The department of Mechanics and Glass of the Institut of Physics Rennes conducted on the ELFIE facility, laser shock experiments to study the behavior of a ternary ZrCuAl BMG under high strain rate, up-to fragmentation process. On the one hand, in-situ diagnostics were used to measure ejection velocities with PDV and debris morphologies were observed by Shadowgraphy. On the other hand, spalled areas (dimensions and features) were characterized through post-mortem analysis (optical observations, profilometry and SEM). These results are compared to experimental and numerical data on the crystalline forms of the ZrCuAl basic compounds.

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