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Metallurgical Effects on the Spall Response of Metals and Alloys.

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Dynamic tensile failure induced by shock loading – spallation – has long been used as a method to characterize the high strain-rate response of materials. However, as well as being controlled by materials properties such as unit cell, stacking fault energy or Peierls stress, and the microstructure, it should also be bourn in mind that spall measurements are not only amplitude dependent, but also geometry dependent as well; in essence they are time integrated. Therefore, the spall strength itself can be time dependent. In this presentation we compare the variation of spall response with impact conditions, and how it compares with other shock induced mechanical properties.