

Abstract Submitted  
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**Influence of thick surface coatings on jet formation in flyer plate impacts** WILLIAM GEORGES, JASON LOISEAU, ANDREW HIGGINS, McGill Univ, TROY TYLER, JOERG ZIMMERMANN, General Fusion — The hypervelocity impact of two flyer plates will produce a fast jet, provided that the collision angle is sufficiently large. At small collision angles, the flow in the reference frame of the impact point is supersonic. The flyers are then deflected by an oblique shock, and no jet is generated. As the impact angle is increased, the oblique shock solution no longer exists. The shock is thus detached, a condition that is associated with the production of a forward-directed jet. The role that surface coatings with significantly different impedance might have on the jetting process has not been previously investigated. In this work, we have studied the effect a thick coating has on the existence of a jet. Aluminum flyers thermally sprayed with a thick layer of aluminum oxide were launched towards each other at 2 km/s at various impact angles, above and below the critical angle for jetting of the respective materials (aluminum and aluminum oxide). Jets for various impact angles were detected and their velocity measured using photon Doppler velocimetry (PDV).

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