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**Numerical Simulation of Impact Effects on Multilayer Fabrics**

ERIC FAHRENTHOLD, University of Texas at Austin — High strength fabrics provide lightweight impact protection and are employed in a wide range of applications. Examples include body armor for law enforcement and military personnel and orbital debris shielding for the International Space Station. Numerical simulation of impact effects on fabric protection systems is difficult, due to the complex woven structure of the fabric layers and the typical application of fabrics in a multilayer configuration. Recent research has developed new particle-element methods for the simulation of impact effects on multilayer fabrics, applicable over a wide range of impact velocities, for use in body armor and orbital debris shielding applications.

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