

Abstract Submitted
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Experimental Results and a Simple Theory for the Early Deflection-Time History of a Ballistic Fabric CHARLES ANDERSON, SIDNEY CHOCRON, Southwest Research Institute — A high-speed digital camera was used to observe the deflection-time history of a Kevlar[®] fabric to bullet impact. It was observed, as others have, that the deflecting fabric has the shape of a pyramid. The average apex angle of the pyramid was calculated from the digital images and was found to be constant with time for the first 50 to 70 microseconds. Using this information, a simple momentum transfer model is shown to capture the velocity-time history of fabric deflection until ply failure. As expected, once ply failure occurs, the model overpredicts deceleration of the bullet.

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