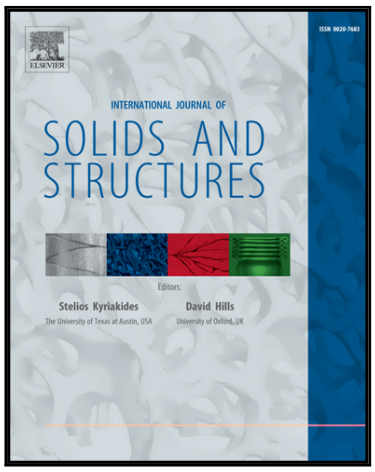

Analytical Solutions for Predicting Tensile and In-plane Shear Strengths of Triaxial Weave Fabric Composites

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Highlights

- The triaxial yarns in three directions of 0° and ±60° are idealized as the curved beams with a path depicted by using sinusoidal shape functions.
- New micromechanical models are presented to predict tensile and in-plane shear strengths of TWF composites accounting for the interaction between angularly interlacing yarns.
- Analytical solutions are derived to estimate the strengths of TWF composites.
- Good correlation is achieved between the predictions and actual experiments