

**VALIDATION OF MULTISCALE DESIGNER AGAINST
T700/2510 UNIDIRECTIONAL AND PLAIN WEAVE
PRODUCT FORMS**

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ABSTRACT

Multiscale Designer is a stochastic multiscale-multiphysics design framework for complex materials that relies on minimal testing contained within the Altair HyperWorks suite of tools. The talk will first overview the methodology used to develop a N-scale multiscale material model which covers both the T700/2510 unidirectional and plain weave product forms from minimal coupon test data, typically 0-tension/compression, 90-tension/compression and 45/-45 tension. The second part of the talk will implement the developed multiscale material model for each product form within stochastic multiscale simulations of various UNT/C and OHT/C laminates to develop stochastic results (mean and standard deviation) for each test specimen. The results of the stochastic multiscale simulation will be compared against the experimental values for the same as a validation exercise for multiscale methods within Multiscale Designer. The data for T700/2510 will come from the publically available AGATE data reports.