

# Accepted Manuscript

A 3D transversally isotropic constitutive model for advanced composites implemented in a high performance computing code

Adrià Quintanas-Corominas, Pere Maimí, Eva Casoni, Albert Turon, Joan Andreu Mayugo, Gerard Guillamet, Mariano Vázquez



PII: S0997-7538(17)30393-5

DOI: [10.1016/j.euromechsol.2018.03.021](https://doi.org/10.1016/j.euromechsol.2018.03.021)

Reference: EJMSOL 3580

To appear in: *European Journal of Mechanics / A Solids*

Received Date: 19 May 2017

Revised Date: 7 March 2018

Accepted Date: 27 March 2018

Please cite this article as: Quintanas-Corominas, Adrià., Maimí, P., Casoni, E., Turon, A., Mayugo, J.A., Guillamet, G., Vázquez, M., A 3D transversally isotropic constitutive model for advanced composites implemented in a high performance computing code, *European Journal of Mechanics / A Solids* (2018), doi: 10.1016/j.euromechsol.2018.03.021.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**List of highlights**

- The constitutive model is fully 3D transversally isotropic, formulated within the framework of continuum damage mechanics.
- The model is suitable for a high performance simulation.
- Failure process due to fibre kinking and breakage and matrix cracking are captured by the model.
- Closed form loading functions are proposed based on experimental observations and verified with a physically based failure criteria at the onset of damage.
- The damage laws are formulated as n-linear piecewise functions considering the crack-band model.

Download English Version:

<https://daneshyari.com/en/article/7170148>

Download Persian Version:

<https://daneshyari.com/article/7170148>

[Daneshyari.com](https://daneshyari.com)