

This thesis deals with the application of the coupled criterion to characterize the first steps of failure mechanisms in composites. The coupled criterion was developed in the context of the finite fracture mechanics and is based on assuming that a crack of a finite extension appears abruptly when a stress criterion is fulfilled and this crack onset is energetically admissible. Using this criterion, the critical load leading to a crack onset can be expressed as a function of well-known physical properties of the material as strength and fracture toughness. The thesis outline can be divided into two main parts: The first part studies the phenomenon of crack initiation and the failure criterion employed here for its prediction. The controversial concept of crack initiation and the main tool employed to predict it are discussed. The formulation and the practical application of the coupled criterion are also reviewed. The second part describes the application of the coupled criterion to different failure mechanisms at different scales: fiber-matrix debonding under transverse loading in FRC, debonding of spherical inclusions in particle-reinforced composites, transverse cracking in cross-ply laminates and crack initiation at a weak surface in a bonded V-notch.

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Continuum mesomechanical finite element - Semantic Scholar Numerical methods such as Finite Elements, Boundary Elements and Finite Volumes in in-house codes and routines developed by Professor Dini's research group. application to micro and meso-scale Finite Element elasto-plastic modelling. Rolling Contact Fatigue and Mechanics of Lubricated Cracks (EPSRC, SKF **Crack initiation in composites at micro and meso scales - Crack Initiation in Composites at Micro and Meso Scales: Development and Applications of Finite Fracture Mechanics** by Israel G. Garcia (9781508849117) **Israel G. Garcia - Citations Google Scholar** Application of a coupled stress and energy criterion transverse tension: A comparison between cohesive zone and finite fracture mechanics models Crack initiation in composites at micro and meso scales: Development and applications of **Crack Initiation in Composites at Micro and Meso Scales** 2nd international conference on mechanics of composites Antonio J.M. 10664 Micromechanical failure modeling of fiber-reinforced composites to the Finite Element Method to solve fine scale boundary value problems, enable both crack initiation and propagation to be shown at the predefined sites and paths. **Research - Professor Daniele Dini - Imperial College London** Crack Initiation in Composites at Micro and Meso Scales: Development and Applications of Finite Fracture Mechanics: Israel G. Garcia: : Libros. **Citations fusionnees - Google Scholar** However, the crack initiation at micro and meso scales is still an interfaces at different scales in composites as will be seen in continuation. terion of the finite fracture mechanics to the interface crack onset in the problem of a stiff theoretical study based on the application of this coupled criterion allowing for obtaining. **Crack Initiation in Composites at Micro and Meso Scales** Crack Initiation in Composites at Micro and Meso Scales. Development and Applications of Finite Fracture Mechanics. Imagen de la tesis. tesis menu. Indice **Crack Initiation in Composites at Micro and Meso Scales - Bokus** Application of a coupled stress and energy criterion transverse tension: A comparison between cohesive zone and finite fracture mechanics models Crack initiation in composites at micro and meso scales: Development and applications of **Micro/macro Approach for Prediction of Matrix C - Explore Bristol** yarns, a criterion developed for modeling failure of unidirectional It leads to an estimation of the crack initiation strain much closer to predict damage onset from the stress fields obtained from a Finite of crack insertion into a meso-scale textile composite RUC. .. Micro and meso

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Crack initiation in composites at micro and meso scales: Development and applications of **Crack Initiation in Composites at Micro and Meso Scales** Crack initiation in composites at micro and meso scales: Development and applications of finite fracture mechanics (English) Taschenbuch – 30. Mai 2015. **Introduction - Servidor de la Biblioteca de Ingenieria. Universidad de** Crack initiation in composites at micro and meso scales: Development and applications of finite fracture mechanics: : Israel G. Garcia: Libros en **prediction of initiation and growth of cracks in composites. coupled** Application of a coupled stress and energy criterion A numerical study of transverse cracking in cross-ply laminates by 3D finite fracture mechanics Crack initiation in composites at micro and meso scales: Development and applications of **Crack Initiation in Composites at Micro and Meso Scales - Facebook** Application of a coupled stress and energy criterion transverse tension: A comparison between cohesive zone and finite fracture mechanics models Crack initiation in composites at micro and meso scales: Development and applications of

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