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عنوان مقاله:

Prediction of matrix cracking density in laminated composites using micromechanics

محل انتشار:

ششمین کنفرانس بین المللی کامپوزیت، مشخصه سازی،ساخت و کاربرد (سال: 1397)

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خلاصه مقاله:

The mechanical behavior of composite laminates, due to anisotropic behavior, is very complicated. On the other hand, to design of laminated composites, accurate prediction of the damage modes is very important, especially in transverse direction. To do this, it is necessary to consider the micromechanics of failure mechanisms. Thus, in this study, the evolution of matrix cracking density in laminated composite is investigated using micromechanics of ply cracking. For this purpose, a unit cell is considered and using the concept of strain energy release rate (SERR) as well as relation between stiffness reduction and SERR, it is tried to predict the matrix cracking evolution. The obtained results are compared with the available experimental ones.

کلمات کلیدی:

Composite, Micromechanical model, Representative volume element, Matrix cracking

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