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### 双分层损伤层合板屈曲的有限元分析

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### FEM ANALYSIS OF DOUBLE DELAMINATION BUCKLING OF COMPOSITE PLATES

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摘要

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**摘要** 采用参考面单元技术, 建立双分层损伤层合板的有限元模型, 研究了不同边界条件下, 分层尺寸和位置对层合板压屈载荷的影响。大量计算表明, 双分层损伤层合板的压屈载荷完全由其最弱的子层确定。在一定的分层位置范围内, 双分层和相应单分层的压屈载荷有极好的一致性。给出的压屈载荷的等值线图可以清晰地描述压屈载荷随分层位置的变化规律。

**关键词:** 分层损伤 屈曲 有限元/双分层 参考面单元

**Abstract:** The FEM (finite element modal) of double delaminated composite plate is constructed using the technology of reference surface finite element. The effects of size and location of delamination on the buckling of the plate are studied under different boundary conditions. The numerical results show that the buckling loads of the double delaminated laminate depend on the weakest subdelamination thickness within the delaminated region and exhibit that an identity of the buckling loads exists between the double and single delaminated plates under the given region. The variable regularity of buckling loads of the double delaminated plate can be clearly explained from the isoline figure in this paper.

**Keywords:** delaminated damage buckling finite element double delamination r eference sur face element

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