

# 高階積層板之有限帶素法分析

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## 摘      要

本文結合高階層板理論與有限帶素法用以解析直交異向性的矩形複合材料積層板。由於高階層板理論之非線性位移場可有效地解決積層板斷面扭曲問題，故並不需要橫向剪力修正係數。藉有限帶素法之特性，本法較有限元素法之板元素節省大量自由度，且可準確的描述積層材料板之位移與應力分析。

關鍵詞：有限帶素法，高階層板

## FINITE STRIP ANALYSIS OF LAMINATED PLATES BY HIGHER-ORDER PLATE THEORY

### ABSTRACT

Based on the higher-order laminated plates theory, the finite strip method is used to analyze the rectangular orthotropic laminated plates in this paper. The warping of cross section can be properly predicted by the nonlinear displacement field of higher-order plate theory. Therefore, the correction function for the transverse shear stress is not necessary. Several examples are illustrated to validate the accuracy and applicability of present model. Although much less degrees of freedom are required than the higher-order plate theory, the present approach is pretty accurate in the displacement and stress analyses of laminated plates.