样条积分方程法分析弹塑性板弯曲

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摘要　　基于形变理论和Mises准则本文用虚载法分别导出Reissner型和Kirchhoff型板弹塑性弯曲方程, 对它们间在多边形简支和轴对称弯曲下的相通性给出论证, 并用弹性板样条积分方程法来求解, 对诸如塑性域的范围和深度以及各点的弹塑性内力和位移等即使在稀疏剖分下也能有良好的计算精度。

关键词　　样条积分方程法　弹塑性板弯曲

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Abstract

In view of deformation theory and Mises criterion, we use the fictitious loads formulation to obtain the elastoplastic bending equations of Reissner's plates and Kirchhoff's plates, respectively, and solve them by the spline integral equation method just as the elasto-pro-blems. The equivalence of these two plate-models under polygonal simply-supported condition and axisymmetric bending is also studied here. The satisfactory results can be obtained even with a few of degrees of freedom.

Key words　Spline integral equation method　elastoplastic bending of plates

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