



## 带非连续解椭圆问题的3次Hermite配点方法

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### Cubic Hermite Collocation Method for Solving the Elliptic Problem with a Discontinuous Solution

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**摘要** 使用3次Hermite配点方法,对一类带有非连续解的椭圆问题进行数值求解,将其解的不连续点取作网格节点,解在不连续点的左右极限作为未知量,结合解在不连续点的“跳跃”信息对原问题进行离散.数值实验表明此方法的收敛阶为 $O(h^4)$ .

**关键词:** 椭圆问题 Hermite插值 配点方法

**Abstract:** The cubic Hermite collocation method is used in discretization of an elliptic problem with a discontinuous solution. The discontinuous points of the solution are taken as grid points, the left and right limits of the solution at the discontinuous points as unknowns. The jumpings of the solution at the discontinuous points are combined to discrete the original problem. The test indicates that the method has the convergence of order  $O(h^4)$ .

**Key words:** elliptic problem Hermite interpolation collocation method

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