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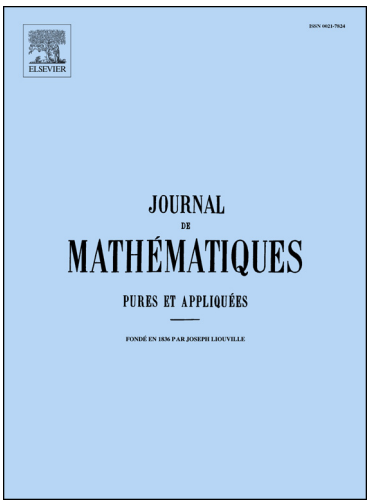

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Carleman estimate for second order elliptic equations with Lipschitz leading coefficients and jumps at an interface

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Abstract

In this paper we prove a local Carleman estimate for second order elliptic equations with a general anisotropic Lipschitz coefficients having a jump at an interface. The argument we use is of microlocal nature. Yet, not relying on pseudodifferential calculus, our approach allows one to achieve almost optimal assumptions on the regularity of the coefficients and, consequently, of the interface.

Résumé

Cet article établit des estimations de Carleman locales pour les équations elliptiques de second ordre avec un coefficient de Lipschitz anisotrope avec conditions de sauts à l'interface. L'argument utilisé est de nature microlocale. De plus, en évitant l'utilisation du calcul pseudo-différentiel, notre approche permet d'obtenir des hypothèses quasi optimales sur la régularité du coefficient et par conséquent sur l'interface.

Keywords: Carleman estimate, elliptic operator, nonsmooth coefficient.
Mathematical Subject Classification 2010: 35J15, 35J57, 35J75

Contents

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