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**Two-scale curved element method for elliptic problems with small periodic coefficients.**

(English summary)

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Multiscale phenomena are often encountered in science and engineering. They are usually described by partial differential equations with highly oscillatory coefficients. This paper is concerned with elliptic second-order problems with small periodic coefficients on a bounded domain with a curved boundary. A two-scale curved element method which couples linear elements and isoparametric elements is proposed. An error estimate is obtained over the given smooth domain. Furthermore, an additive Schwarz method is provided for the isoparametric element method.

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