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**Short title:** A posteriori error estimates of a non-conforming finite element method for problems with artificial boundary conditions.

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**Review text:**

The authors consider a second order elliptic equation with boundary (artificial) conditions containing an implicit integral form. This type of the elliptic boundary problems arises, for instance, from the transformation of elliptic problems imposed on unbounded domains. A non conforming finite element method is suggested. A posteriori estimates are presented. Some numerical examples justifying the efficiency of the method are provided.