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## Convergence of the FEM in domains with external cusps. \*

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### Abstract

In [1] the finite element method was applied to a non-homogeneous Neumann problem on a cuspidal domain  $\Omega \subset \mathbb{R}^2$ , and using regularity results developed in [2], quasi-optimal order error estimates in the energy norm were obtained for certain graded meshes. In this talk we present similar results for the error in the  $L^2$  norm. Since many classical results in the theory of Sobolev spaces do not apply to the domain under consideration, our estimates require a particular duality treatment working on appropriate weighted spaces. Our talk is based on the recent article [3].

### References

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- [3] G. ACOSTA, M. G. ARMENTANO, Finite element approximations in a non-Lipschitz domain: Part II, To Appear in *Math. Comp.*

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