

VIRTUAL ELEMENT METHODS FOR ELLIPTIC PDES IN NON-DIVERGENCE FORM

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ABSTRACT. Elliptic PDEs in non-divergence form with (discontinuous) Cordes coefficients admit a Miranda-Talenti estimate on convex domains that yields well posedness in H^2 . We develop structure preserving C^1 virtual element methods that satisfy a rather simple discrete Miranda-Talenti estimate, and derive optimal error estimates (including the effect of quadrature) without requiring regularity of the coefficients beyond the Cordes condition. This is joint work with G. Bonnet and A. Cangiani.

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