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Fully computable error bounds for discontinuous Galerkin finite element approximations on meshes with an arbitrary number of levels of hanging nodes. (English) [Zbl 1208.65155](#)
SIAM J. Numer. Anal. 47, No. 6, 4112-4141 (2010).

This paper deals with a finite element approximations of a linear second-order elliptic problem on meshes containing an arbitrary number of levels of hanging nodes and comprised of triangular elements. An important part of analysis involves the construction of a bounded right inverse of the divergence operator. Fully computable upper bounds, as well as lower bounds are derived. Two numerical examples illustrating the theory are presented.

Reviewer: [Pavol Chocholatý \(Bratislava\)](#)

MSC:

[65N15](#) Error bounds for boundary value problems involving PDEs

Cited in **10** Documents

[65N30](#) Finite element, Rayleigh-Ritz and Galerkin methods for boundary value problems involving PDEs

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