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SOME NONSTANDARD FINITE ELEMENT ESTIMATES WITH APPLICATIONS TO 3D POISSON AND SIGNORINI PROBLEMS *

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Abstract. In this paper we establish several nonstandard finite element estimates involving fractional order Sobolev spaces, with applications to bubble stabilized mixed methods for the three-dimensional Poisson and Signorini problems.

Key words. fractional order Sobolev spaces, Poisson, Signorini, mixed method, bubble finite element stabilization.

AMS subject classifications. 65N30, 35J85.

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