08-26-2019

Friday, August 16, 2019 11:05 AM

a.

Lemma 2.3. *If $E \in \mathcal{T}_h$ and $\phi \in L^2(E, \mathbb{M})$, $\phi \in L^2(E, \mathbb{R}^d)$ is a function mapped using Piola transformation, then*

$$\|\phi\|_E \sim h^{\frac{2-d}{d}} \|\phi\|_{\hat{E}}. \tag{2.68}$$

Corollary 2.1. *The bilinear form $(L\phi, \psi)_Q$ is an inner product on $\mathbb{X}_h$ and Z_h, $(L\phi, \psi)_Q^{1/2}$ is also a norm in $\mathbb{X}_h$ and Z_h equivalent to $\|\cdot\|_{\mathbb{X}}$ and $\|\cdot\|_{Z_h}$, respectively.*

1. Questions related to inf-sup stability adaptation for elasticity(refer to rough calculations for more details) :
   a. The operators like R^h(tau) seems to be define on H_0(Omega,M) instead of H(div,M), this is a smaller space than what we have for our continuous problem.!
   b. R^h operator is the core of calculations, is this the interpolatin operator or the solution to the discrete mixed problem?
   c. In S3, in rough calculations, we need the correction to satisfy one more condition as well: most favorably the one which is at least weakly symmetric. Which is this extra condition and how to impose it.
   d. Existance of correction depend on (3.9), what is the equivalent condition for our problem.
2. What is the bilinear form L exactly?
3. What is the exact statement for **discrete trace inequality**?
4. Is there any actual difference between |sigma.n|_0.5 and |sigma.n|_-0.5 for our case: **Asnwered.**
5. Talks about equilance of norm in couple of instances in Ilona's paper.
6. How much of star, bar problms and reduction to interface problem has to go into the new paper?
7. Make sure that domain on integrations for different terms in for DD2 formulation with weakly imposed symmetry is correct.