Reconstruction-based a-posteriori error estimation in stress-based FEM for frictional contact problems

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We are studying the application of the stress-based FEM described in [1] featuring next-to-lowest order Raviart-Thomas-Elements to the Signorini contact problem with Coloumb friction using a dual variational formulation similar to the one studied in [2].

We extend the a-posteriori error estimator in [4] to frictional contact and reconstruct a H^1-conforming displacement following the ideas in [3]. We prove reliablity of our error esitmator under similar assumptions as those made in [5] for uniqueness and test its efficiency by numerical experiments in two and three dimensions.

References

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