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An isogeometric method for linear nearly-incompressible elasticity with local stress projection

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Highlights of the manustript "An isogeometric method for linear nearly-incompressible elasticity with local stress projection"

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The main contributions of the submitted manuscript can be summarized as follows:

- We have proposed a new locking-free Galerkin isogeometric method for the nearly-incompresible elasticity problem in the linear regime, that is purely based on displacements.
- The method consists on the approximation of volumetric part of the strain by means of piecewise discontinuous spaces with lower degree defined on coarser meshes, with respect to the displacement ones. Consequently, when this field is eliminated from the system of equations, the locality of the operators is preserved.
- The method provides high-order optimally-accurate solutions for all Poisson ratios and it is inf-sup stable, what is proved both theoretically and numerically.