

Virtual Element Method

Project Characteristics

Mechanics: ★★☆☆☆
Mathematics: ★★★★★
Programming: ★★☆☆☆

Setting:

- The Finite Element Method integrates the weak form of differential equations on reference elements
- A recently proposed Virtual Element Method allows for arbitrarily shaped elements eg. polyhedrons in 3 dimensions

Your Tasks:

- Carry out a literature-research on the method and dig through its mathematical foundations.
- Program the method in 2D and 3D for linear elasticity and evaluate its performance on benchmarks.
- Consider extensions to high-order schemes and non-linear elasticity

