

INSALATE DI MATEMATICA



Mixed virtual element methods for contact problems

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IN THIS TALK

Virtual Element Methods (in short, VEMs) are a recent family of numerical methods widely employed today for approximating partial differential equations. This class of Galerkin methods naturally adapts to arbitrary polygonal decompositions of the domain, due to the adoption of discrete spaces that are no longer limited to polynomials. This flexibility makes VEMs particularly well-suited for dealing with variational problems with complex geometries and non-standard boundary conditions.

In this talk, we will begin with a brief introduction to the virtual element methods, aimed at illustrating their fundamental ideas.

We will then explore the application of a Stokes-like virtual element method to address a central problem in solid mechanics, known as the contact problem. In this context, we will highlight the main advantages of VEMs for its numerical approximation.

Keywords: VEMs, Contact problems

"Obvious" is the most dangerous word in mathematics.
(Eric Temple Bell)