

HOURGLASS CONTROL BY MEANS OF THE VIRTUAL ELEMENT METHOD

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The 8-node three-dimensional and 4-node two-dimensional isoparametric elements are widely used in computational mechanics. In order to perform fast calculations, one-point integration is often used; however, it is well-known that such an approximation gives rise to spurious singular modes, which are referred to as *hourglass modes* in the solid mechanics literature. Several techniques have been proposed to deal with this phenomenon, starting from the seminal paper of Flanagan and Belytschko [1].

In this talk, we will show how the recently introduced Virtual Element Method (VEM) [2] addresses the problem of hourglass control, recovering the Flanagan-Belytschko stabilization in a much more general setting and proving rigorously the convergence of the method.

REFERENCES

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