

## Treatment of blunt corners with the X-FEM

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### ABSTRACT

The contribution deals with the treatment of blunt corners within the X-FEM [1, 2]. Indeed, such geometrical entities are commonly found in industrial structures. Because of their small radius or curvature with respect to the size of the structure, these geometrical features are usually removed from the CAD in a first step, in order to simplify the meshing process [3]. However, this approach introduces artificial stress singularities in the solution. The first objective of this contribution consists in the use of a sub-grid level-set approach in order to take into account seamlessly these small features [4, 5]. As the solution is now regular, a high-order approximation is considered in order to recover a high accuracy on coarse meshes. In a second step, the influence of the radius of curvature on the convergence is highlighted, which motivates the use of enrichment functions. The selection of these functions and their influence are finally discussed.

### References

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