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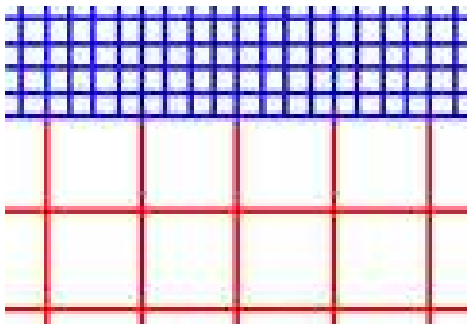
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Non-conforming meshes

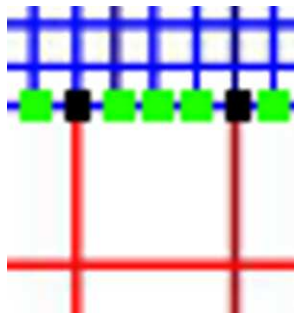
- Matching conditions between the fluid and the solid regions are imposed, based upon a weak formulation of the interface equations.
- Non-conforming mesh are to be considered, enabling for a more flexible mesh refinement approach (fluid-solid).

Non-conforming meshes



- Quadrilateral elements.
- Blue: acoustic.
- Red: elastic.
- Matching and non-matching points in the planar interface.

Non-conforming meshes



Problem: Interpolation at the non-matching points (green points).

- Error: accuracy of the interpolation to preserve the order of the method.
- Computational cost: global operation.

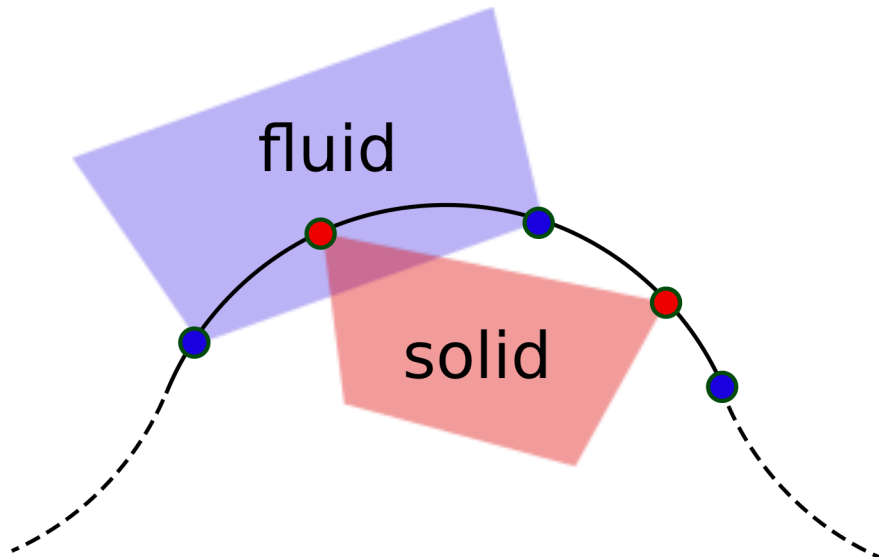
Solution (under consideration): Interpolation via B-Splines.

Non-conforming meshes

B-Splines:

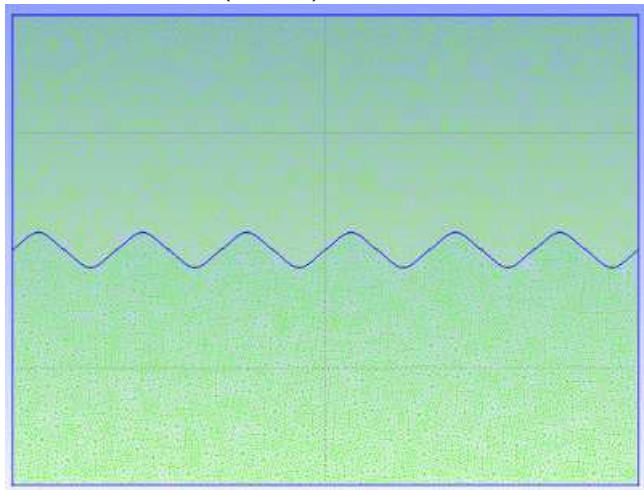
- Flexible programming purposes.
- Easy to increase the order.
- Suitable to curved interfaces.

Non-conforming meshes



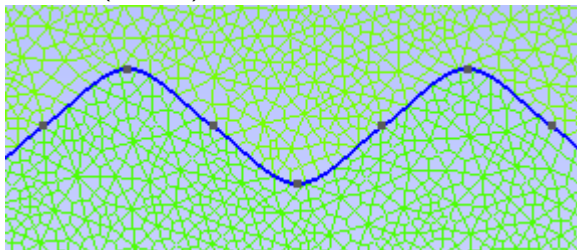
Non-conforming meshes

General interface (curved):



Non-conforming meshes

General interface (curved):



Straight elements on curved interfaces are not convenient.

Non-conforming meshes

