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Optimizing fluid–structure interaction systems with immersogeometric analysis and surrogate modeling: Application to a hydraulic arresting gear

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Highlights

- A fluid–structure interaction design optimization framework is proposed.
- Structures are discretized isogeometrically and immersed in an unfitted fluid mesh.
- Changes to the structure design do not require any mesh (re-)generation.
- Surrogate modeling prevents excessive model evaluations during optimization.
- The framework is applied to optimization of a hydraulic arresting gear.