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Experimental measurement of ice load on a hydraulic structure

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Why do we do that?

In cold regions:

- Ice load to the structure is the major force
- Stationary load from the ice cover and ice jam to:
 - River banks
 - hydraulic structures
 - Bridge piers
 - Embankments
 - Floating structures
- The ice magnitude can be calculated based on the force balance, although the load calibration is needed



How did we do this?

Hydraulic Laboratory of the
Gdansk University of Technology

For measuring the ice jam load, an
electrical device with three load sensors
was developed

The formation of ice was simulated by
polypropylene parcels, forming jam around a
rectangular cylinder as the hydraulic structure

Measurements were compared with the
numerical model results



What do we have obtained?

