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Influence of temperature and salinity on hydrodynamic forces

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Highlights

- We have developed specific software to calculate hydrodynamic forces on offshore piles.
- It will be carried out a thorough, critical analysis of the influence of sea temperature and salinity on the hydrodynamic forces on piles.
- The study includes observations on the calculation model's sensitivity as to a variation in the cylinder's diameter, on the one hand and, on the other, as to temperature and salinity variation.
- Increasing temperature acts as a diameter amplifying component allowing the discontinuity or leap very clearly observed in inertia forces.
- It is observed that the maximum forces are given for the lower values of temperature and salinity.
- Both parameters will not have any influence in simplified models of calculation which do not take into account the dynamic behaviour of the structure and the coupling between the sea waves and the structural elements. However, it will be necessary to observe the correct values of temperature and salinity in complex calculation models

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