Computational modeling and experimental validation of free surface flows and related problems

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ABSTRACT

The presentation covers a series of numerical techniques used successively to solve different free-surface or two-phase flow problems, mostly involving agitation in closed vessels. These techniques include finite element methods and finite volume methods, considering moving or fixed meshes as a strategy to describe the motion of the interfaces [1]. Also, the validation dynamics of the numerical methods is established with experimental records of harmonic sloshing in closed vessels for different geometries [2,4], in some cases considering the interaction of the fluid with submerged elements [3,5].

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