

A Mix of Computational Techniques for a Better Blend

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Abstract

Despite the fact that “computer mixing” has aroused interest over the past 30 years or so, its role and usefulness still remain unclear to many people from the mixing community. This presentation will attempt to bring elements of answer to this question by reviewing some of the most significant techniques and methods that have been developed to simulate the flow of fluids and solids in various mixing applications. Through many examples of industrial relevance, we will discuss issues such as problem setting, model development, model verification and validation, determination of physical properties, hardware resources, and convergence of results. Upon doing so, we will evidence the progress made in computer modelling but also bring up aspects that need to be further improved, such as the availability of robust and efficient techniques that can cope with multiphase and multi-physics mixing flows.