

Questions

(multiphase only)

1. How many phases can be present in the same system? Please classify phases and interfaces based upon their topology and other properties. List and critically assess the possible CFD modelling strategies for multiphase problems.
2. Please outline the concept of fine resolution CMFD modelling. How many balance equations you need, how do you obtain constitutive relations? How do you include inter-phase processes in such a model? What is the critical issue in such an approach?
3. What are the balance equations and the primary field variables in a one-fluid model? What are the basic assumptions of the one-fluid model? How can a one-fluid model be improved?
4. How many balance equations are in a multi-fluid model? How can inter-phase processes be included in the balance equations? How many constitutive equations are needed, and where one can obtain these?
5. Please outline the concept of disperse phase modelling. What kind of complications arise with increasing particle loading? What sort of physical processes can be modelled in a discrete phase problem?

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