

Discrete Bubble Model (DBM) DF_MULTI_SAP[®] in Fluent UDF

The DF_MULTI_SAP[®] Discrete Bubble Model (DBM) is a User Defined Function (UDF) for Fluent. This code brings the capabilities of DYNAFLOW's bubble tracking and dynamics analysis code, DF_MULTI_SAP[®], into the flexibility and user friendliness of Fluent.

What does the DF_MULTI_SAP[®] Discrete Bubble Model (DBM) do?

- DBM enables Fluent users to include the presence of bubble nuclei or purposely injected bubbles in their flow modeling
- DBM follows individual bubbles and computes their dynamics
- DBM computes the pressures generated by the bubbles
- DBM works within Fluent, and is similar to Fluent's discrete phase model (DPM) particle tracking module

Why do I need it?

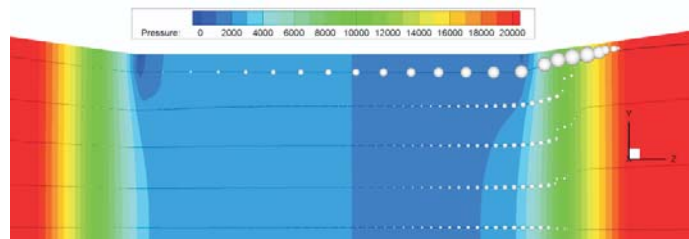
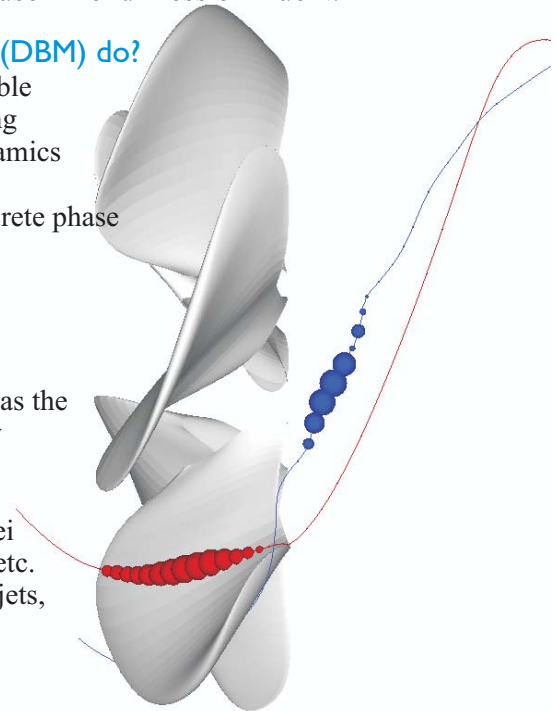
- All liquids contain microscopic bubble nuclei
- In locally low pressures and in large pressure gradient areas the dynamics of these nuclei can affect the flow significantly
- DBM accounts for the presence of these bubbles
- Bubble behavior and acoustic noise are modeled
- DBM is a tool for cavitation inception study, bubble nuclei effects, noise from the bubbles, propulsion modification, etc.
- Industrial applications include: 2-phase flows, pipe flow, jets, biological flows, pumps, propellers, ships, etc.

Discrete Bubble Model (DBM), Version 1.0

- Bubble dynamics (incompressible & compressible)
- Bubble tracking (works with several DPM options)
- Works with Fluent 2D & 3D, steady and unsteady
- Post-processing using the Fluent GUI
- Compatible with Fluent 6.2 and later
- Platform: Windows XP (Please check with DYNAFLOW for other platforms.)

Applications:

- Propellers, impellers, water jets
- Cavitation inception
- Ship wake noise signature
- Bubble-flow interaction
- Suitable for 2-phase, bubble dynamics, cavitation, noise studies, ..etc.



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