

**Stewart, C. W.****Bubble interaction in low-viscosity liquids.** (English) Zbl 1135.76553

Int. J. Multiphase Flow 21, No. 6, 1037-1046 (1995).

Summary: An experimental study investigated how freely rising ellipsoidal bubbles approach each other, make contact and coalesce or breakup. Pulsed planar swarms of 10-20 bubbles with Eötvös numbers from 6.0 to 27.5 were released simultaneously in aqueous solutions of 0-48 wt% sugar with Morton numbers from  $3.2 \times 10^{-11}$  to  $3.7 \times 10^{-6}$ . Bubble interaction was recorded by a video camera following the rising bubbles. Essentially, all coalescence and breakup events occurred after, not during, wake-induced collisions by a complex process related to the bubble vortex shedding cycle. This same process was also found in multi-bubble clusters and may account for excess turbulent kinetic energy generation in bubbly flow.

**MSC:**

76Txx Multiphase and multicomponent flows

Cited in 6 Documents**Keywords:**

bubbles; coalescence; breakup; bubble swarms; turbulence; bubbly flow

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