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**Numerical simulation of shock/bubble-cloud interaction problems**[1] KEITA ANDO, California Institute of Technology, TIM COLONIUS, CHRISTOPHER BRENNEN, Califonia Institute of Technology — The interaction of a shock wave with a dilute bubble cloud is computed using a continuum two-phase model incorporating the effect of a distribution of nuclei sizes. The bubble dynamics are evaluated using a Rayleigh-Plesset-type equation including the effects of heat transfer, liquid viscosity and compressibility. A finite-volume WENO scheme coupled with an approximate HLLC Riemann solver is developed to solve the shock problems. Linear and shock wave propagation through a one-dimensional bubble screen is computed and the effect of phase cancellations among the different-sized bubbles is quantified. The size distribution in the screen is found to increase the cushioning of the shock loading. Computations of shock/bubble-cloud interaction in two dimensions are also presented.

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