LETTER TO THE EDITOR

HYDRODYNAMIC DISPERSION IN SEDIMENTING SYSTEMS

Ham & Homsy (1988) recently reported hydrodynamic dispersion coefficients that are based on their observation of fluctuations in the fall speed of a single marked sphere settling due to gravity in the midst of a suspension of unmarked but otherwise identical spheres. These coefficients, which depend on the concentration of particles, were compared with values inferred by Davis & Hassen (1988) from measurements of the rate of spreading of the interface at the top of a sedimenting suspension.

Unfortunately, I made an error in the analysis of the interface spreading data; all of the hydrodynamic dispersion coefficients reported by Davis & Hassen (1988) are too high by a factor of two. Fortunately, the corrected coefficients are in very good qualitative *and* quantitative agreement with the values reported by Ham & Homsy (1988); as may be seen in figure 6 of their paper with the experimental values of Davis & Hassen (1988) reduced by a factor of two.

Although the dispersion coefficients of Davis & Hassen (1988) are not expected to be identical to those of Ham & Homsy (1988), because the former were measured in the presence of a concentration gradient whereas the latter were not, the close agreement of the correlated values is satisfying. In particular, it gives credence to the conclusion that hydrodynamic dispersion arising from viscous interactions between sedimenting particles is an existing and observable phenomenon.

R. H. DAVIS
Department of Chemical Engineering
University of Colorado
Boulder, CO 80309-0424, U.S.A.
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