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Dan Joseph's contributions to disperse multiphase flow[1] ANDREA PROSPERETTI, Mechanical Engineering, Johns Hopkins Universitry and Applied Sciences, University of Twente — During his distinguished career, Dan Joseph worked on a vast array of problems. One of these, which occupied him off and on over the last two decades of his life, was that of flows with suspended finite-size particles at finite Reynolds numbers. He realized early on that progress in this field had to rely on the insight gained from numerical simulation, an area in which he was a pioneer. On the basis of the early numerical results he recognized the now famous "drafting, kissing and tumbling" mechanism of particle-particle interaction, the possibility of fluidization by lift and many others. With a number of colleagues and a series of gifted students he produced a significant body of work summarized in his on-line book *Interrogations of Direct Numerical Simulation of Solid-Liquid Flows* available from `http://www.efluids.com/efluids/books/joseph.htm`. This presentation will describe Joseph's contribution to the understanding of disperse multiphase flow and conclude with some examples from the author's recent work in this area.

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