P R E F A C E

The study of dusty fluid flows has received considerable attention in the last three decades due to its application in understanding the scientific and engineering problems involved in air pollution, nuclear reactor cooling, motion of aerosols etc. The mathematical modelling makes suitable assumptions so that the suspended solid particles can be considered to form a pseudo fluid.

The present study pays attention to the flow and heat transfer characteristics in the mixing region of an axisymmetric jet. The governing equations and a brief account of the relevant literature have been given in the introductory chapter. The next four chapters deal with the laminar mixing of an axisymmetric jet bringing out the effect of the dust concentration, compressibility of the carrier fluid, volume fraction and Brownian diffusion of the solid particles. The last chapter deals with the turbulent axially symmetric jet flow of a dusty fluid.

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