



3rd International Workshop
on
THE PHYSICS
OF COMPRESSIBLE TURBULENT MIXING

Abbey of Royaumont (France) - JUNE 17 - 19, 1991

FRONT COVER

Colorized version of a black and white Schlieren photograph of a mixing zone between air (top, red color) and sulphur hexafluoride (SF₆, bottom, blue) induced by the Richtmyer-Meshkov instability in the Vaujourn vertical shock tube (horizontal scale 7.5 cm). The incident shock in SF₆ (Mach 1.45) has accelerated upward a 1.7 cm wide molecular diffusion zone with a weak embedded perturbation due to the retraction (from right to left) of a separating blade. The picture shows the amplification of these perturbations, 3.15 ms after the initial interaction, and about the time of passage of the second shock reflected from the end plate of the shock tube (located 54.4 cm above the blade). On the original Schlieren picture (printed upside down on page 25 in CHOCS 2, CEA DAM scientific and technical journal) the fine scales visible on the SF₆ side are the signature of turbulent mixing in the boundary layers, but the more puzzling smoothness of the edges of the interpenetrating air bubble (center) and SF₆ spikes (on its sides) may be due to an optical effect. These details are somewhat erased by the colorization process which was performed by the laser experiments group at Limeil.

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