Rice University
George R. Brown School of Engineering
Department of Chemical and
Biomolecular Engineering

Presents

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Sedimentological Regimes for Subaqueous Turbidity Currents

Subaqueous turbidity currents may be the dominant mechanism by which sediments are moved from continents into the deep ocean; these flows are critical in the formation of submarine canyons and corresponding submarine fans. For three decades researchers have studied depth-averaged mechanical models for these currents, working to identify the circumstances under which the erosion of underlying material by a turbidity current could lead to an "auto-igniting" sustainable flow. We use a simplified version of such a model to address a different problem: the global regime diagram for the sedimentological properties of these flows as a function of the Richardson (Froude) and Rouse numbers of the flows. In different segments of this diagram the flows are predominantly depositional, erosional, or bypass in nature.

About the Speaker

Thomas C. Halsey is Chief Computational Scientist at ExxonMobil. Since joining ExxonMobil in 1994, he has worked in a variety of research, management, and staff positions in New Jersey and Texas. Previously, he was on the faculty of the University of Chicago. He received a Ph.D. in physics from Harvard University in 1984.

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