

Abstract Submitted
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Impingement of a plume on a non-horizontal rigid boundary

ALAN JAMIESON, STUART DALZIEL, University Of Cambridge — Buoyancy driven flows created by density differences, plumes are a phenomenon observed in many situations in both nature and industry. Instances of plume impingement on a rigid boundary are also common. Whether this smoke from a candle impacting on a ceiling or, for a much larger scale example, plumes in the ocean descending onto the continental shelf, such as in dense water formation in the Weddell Sea. In both these cases, and many others, the boundary is rarely a horizontal plane and so motivates the study for a plume impacting on a non-horizontal geometry. After reviewing previous work of a plume impinging on a horizontal, we introduce the problem of a plume impinging on an incline by presenting experiments varying the angle of inclination and the distance between the boundary and plume source. In an attempt to understand dynamics of large scale plumes in ocean, we also present the same experiment in a rotating system.

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