

MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Microgravity Sciences Onboard the International Space Station and Beyond - Part 1 (6)

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TURBIDITY MEASUREMENTS IN OFF-CRITICAL SF6

Abstract

Light transmission and turbidity measurements in the (one-phase) homogeneous region of SF₆ close to its critical point have been performed in the high-quality thermal and optical environment of the CNES dedicated facility ALI-DECLIC on board the ISS. These precise measurements have benefited from the off-density criticality of the test cell and from the microgravity environment of the space station. The asymptotic formulations for the static isothermal compressibility and the correlation length are verified thanks to these new experimental data that cannot be obtained in ground-based experiments. These data are also used to test different critical-to-classical crossover formulations of the universal equation-of-state of Ising-like systems