Turbidity and Related Properties Very Near the Critical Point of SF_6, from Measurements Under Weightlessness

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Light transmission and turbidity measurements are performed in SF_6 close to its critical point. Experiments profited from the microgravity environment of the Mir Space Station using the ALICE2 facility. Measurements were made at near critical density in the (one-phase) homogeneous region. These measurements allow asymptotic formulations for the static isothermal compressibility and the correlation length to be verified. These latter formulations are used to check a recent asymptotic representation for the thermal diffusivity D_T very near the critical temperature.