

Phase Separation Study Near the Tricritical Point in 3He-4He Mixtures

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Our understanding of critical phenomena can be uniquely tested at the tricritical point in the helium-3/helium-4 phase diagram. The associated critical exponents are (exact) integer fractions with logarithmic corrections to this critical behavior because $D=3$ is the marginal spatial dimension for tricriticality. All of the phase boundaries should appear linear in the temperature concentration plane, with extremely weak logarithmic corrections. We report on our study of the phase separation performed using inter-digital capacitor sensors on the top and bottom of our cell to measure the phase separation by probing the local concentration.

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