Experiments Along Coexistence near Tricriticality in 3He-4He Mixtures

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The tricritical point in the phase diagram of 3He-4He mixtures offers unique opportunities to test our understanding of critical phenomena. Because D = 3 is the marginal spatial dimension for tricriticality, the associated critical exponents are exact integer fractions. In addition, one expects to find logarithmic corrections. We present our results for the superfluid density, obtained from time-of-flight non-linear second sound measurements near the tricritical point and along the phase separation curve. We also report on our measurements of the phase separation curve near the tricritical point performed using inter-digital capacitor sensors on the top and bottom of our cell.