SUSCEPTIBILITY OF FINITE-SIZE BINARY LIQUID MIXTURES IN THE CRITICAL REGION

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S u m m a r y

The scaling hypothesis for finite-size binary liquid mixtures is used to study the susceptibility in the liquid-liquid and liquid-vapor critical regions. The dependence of the susceptibility on temperature and field variables as well as on the scaling densities φ_1, φ_2 and the linear size of a system is found to determine the consequences which can be verified experimentally. A change of the critical behavior of susceptibilities determined by the correlators $\langle\varphi_1\varphi_1\rangle$, $\langle\varphi_2\varphi_2\rangle$, and $\langle\varphi_1\varphi_2\rangle$ has to exist for the liquid-vapor critical state in a finite-size binary liquid mixture. The limiting transition from the susceptibility of a finite-size binary liquid mixture to that of a system where all its linear sizes become infinite is examined.