ACOUSTIC PROPERTIES OF LIQUID SYSTEMS NEAR THE CRITICAL TEMPERATURE

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S u m m a r y

Making use of acoustic spectroscopy methods, the sound attenuation factor and the sound propagation velocity in liquid systems have been studied in a wide range of frequencies, concentrations, and temperatures, including a neighborhood of the critical consolute temperature (CCT). A relaxation interval of sound attenuation has been shown to exist for studied solutions with critical concentration at frequencies lower than 300 MHz when approaching CCT. This interval is caused by creation and decay of critical fluctuations. The relaxation time of those processes, being the averaged lifetime of concentration fluctuations, increases when approaching CCT. The obtained data qualitatively agree with conclusions of dynamical theory of critical phenomena.