Intensity Increasing of Light Beam Which Passes across Inhomogeneous Medium near the Critical Point

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The trajectories of light rays propagation in inhomogeneous system under gravity near the critical point have been experimentally investigated in the work by light scattering and refractometry technique. The change of their divergence angle at different heights has been taken into account [1,2].

It has been shown that they focused by inhomogeneous medium under these conditions. It occurs at an increase of their intensity.

These data also shows the essential increasing of the intensity of beam which passes across inhomogeneous substance near the level of the critical isochore when the system approaches its critical temperature. This result can be explained by the same physical processes, which occur when the powerful laser beams interact with the liquid medium far from the critical point [3,4], which leads to their self focusing.

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