

TRANSITION EFFECT
AT THE MEDIUM—VACUUM
INTERFACE UNDER THE SELF-PHASE
MODULATION OF A LIGHT PULSE

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S u m m a r y

The phase self-modulation of nanosecond laser pulses under the quasi-stationary self-focusing in the Kerr liquid has been studied. Computations of the additional phase delay, the instantaneous frequency, and the pulse spectrum have been carried out. The results of computations and the experimental data obtained evidence for the existence of the transition effect which promotes the appearance of new spectral components at the medium boundary. The spectral components, which arise owing to this effect, have the Stokes shift of about 100 cm^{-1} with respect to the exciting radiation frequency. Notwithstanding the possible significant frequency broadening of the pulses, the spectral energy density remains maximal at the unshifted frequency.