

# The investigation of opto-polarizing properties of a shock-compressed krypton plasma

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The presence of significant difficulties in the theoretical description of a warm dense matter with a strong interaction of particles leads to the need to obtain as much experimental information as possible about the optical and transport properties of such a medium. Analysis of the response of a shock-compressed plasma to an electromagnetic wave of moderate intensity can be used as a tool to study the reliability of physical models describing the behavior of a substance at high temperatures and pressures.

The results of new experiments on reflectivity of polarized light of an explosively driven dense krypton plasma are presented. The plasma was investigated by the method of oblique probing. The measurements of polarized reflectivity coefficients of strongly correlated dense plasma have been carried out at incident angles up to  $\theta = 55^\circ$  simultaneously for s- and p-polarization using laser light of frequency  $\nu_{\text{las}} = 2.83 \times 10^{14} \text{ s}^{-1}$ . During the experiments, the plasma density  $\rho = 1.7 \text{ g/cm}^3$ , pressure up to  $P = 10 \text{ GPa}$  and temperature up to  $T = 25100 \text{ K}$  were realized.

The composition and thermodynamic parameters of the plasma were determined using the modified Saha IV code.