

Reflective properties of strongly coupled krypton and xenon plasmas

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The study of the optical properties of a warm dense matter characterized by a strong interparticle interaction is relevant both from the point of view of fundamental science and from one of practical use. The reflective probing technique, which studies the response of the object of study when interacting with an electromagnetic wave of moderate intensity, occupies a special place among other approaches, since it has the properties of non-distorting measurements, high sensitivity to changes in the state of the object under study and, moreover, is the only possible one under the conditions of many scientific tasks.

The results of new experiments on reflective properties of an explosively driven dense krypton and xenon plasmas are presented. The plasma was investigated by the method of oblique probing. The experiments were performed in the near infrared region of the spectrum at the plasma density up to $\rho = 2 \text{ g/cm}^3$, pressure up to $P = 11 \text{ GPa}$ and temperature up to $T = 27000 \text{ K}$.

The composition and thermodynamic parameters of the plasma were determined using the modified Saha IV code [1].

[1] Gryaznov V K, Iosilevskiy I L and Fortov V E 2012 *AIP Conf. Proc.* **917** 1426