

**INTERFERENCE DIAGNOSTICS THE DYNAMICS OF
THE TARGET SURFACE MOVEMENT DURING
ABLATION USING A FREQUENCY-MODULATED LASER
PULSE**

Komarov P.S., Struleva E.V.*

JIHT RAS, Moscow, Russia

**komarov-p@yandex.ru*

A technique has been developed for femtosecond spectral interferometry using frequency-modulated diagnostic pulses for the continuous recording of the displacement of the metal film surface. The method of continuous registration on the basis that different spectral components of the diagnostic pulse probe the heated region of the target at different times. The technique allows to obtain images with high spatial and temporal resolution of samples in the picosecond time range.

For the diagnosis of deformation used Michelson interferometer with transfer image (Linnik configuration) of the surface of the sample onto the entrance slit of the spectrometer. The expansion into the spectrum of the frequency-modulated signal from the output of the interferometer was carried out using a diffraction spectrometer. The recording of optical signals at the output of the spectrometer was performed by a CCD camera.

The realized measurement scheme provides continuous registration of the displacement of the sample surface as a function of time with spatial resolution and different time resolution, determined by the dispersion of the spectrometer.