Development of combined interferometry light erosive gas-plasma flows techniques and complex automatic treatment of its results

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For the first time registration techniques and automatic results treatment for combined light erosive gas-plasma flows interferometry and target mass flow rate are developed. These techniques application provided ability to evaluate spatio-temporal distribution of optical (refraction and extinction coefficients) thermophysical (temperature, density, electron concentration), gas dynamic (velocity distribution, mean velocity, pressure) and optomechanical (momentum coupling coefficient) characteristics in light erosive gas-plasma flows. Frequency filters applications features are considered at different stages of automatic treatment results. Examples of experimental results treatment are presented for condensed matter ultrashort laser irradiation. Specifically static and total pressure spatio-temporal distribution has been experimentally evaluated for the first time

Keywords: *interferometry of light erosive plasma-gas flows, Makelson and Mach—Tsender schemes, automized processing.*

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