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**Study of registration threshold for minimal specific weight of particles when investigating shock-wave ejection from material surface using laser heterodyne-interferometer. Recording of multiple doppler frequency shift effect.** ALEXEY FEDOROV, ANATOLY MIKHAILOV, STANISLAV FINYUSHIN, EV'GENIY CHUDAKOV, DENIS KALASHNIKOV, EV'GENIY BUTUSOV, IVAN GNUTOV, Institute of Physics of Explosion, Russian Federal Nuclear Center All-Russia Research Institute of Experimental Physics, Sarov. Russia — When the shock wave reaches the free metal surface, the particle ejection occurs. Particle flow parameters are recorded by different methods. This paper contains the results of experimental series on determination of minimal specific weight of the particle flow, when particle velocities can be recorded using laser heterodyne-interferometer (PDV method). The registration threshold is determined by measuring the velocity of ejected particles after coating a test surface with a layer of particles having the certain specific weight. The effect of laser emission interaction with a thin layer of particles is recorded in experiments, and it causes the multiple Doppler frequency shift. This effect plays a vital role in interpretation of data obtained in experiments with recording of parameters of shock loaded ejection of materials.

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