

Abstract Submitted  
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**Investigation of dusty plasma liquid viscosity** IYA SHAKHOVA, Institute For High Energy Densities RAS, ANDREY GAVRIKOV, OLGA VAULINA, ALEXANDER IVANOV, NAZAR VORONA, OLEG PETROV, VLADIMIR FORTOV, INSTITUTE FOR HIGH ENERGY DENSITIES RAS TEAM — The series of experiments aimed at investigation of dusty plasma shear viscosity has been carried out by us. We have concerned ourselves with laminar flow of dusty plasma caused by laser radiation pressure. Experimental dependencies of flow velocity profile on value of external influence and plasma generating gas pressure have been obtained. Based on these data shear viscosity coefficient dependencies on laser beam power have been got, the dependencies being different for different background gas pressure. Dusty plasma liquid represents a multiphase medium with screened Coulomb interaction between solid grains. This results in the complexity of experimental data interpretation. It should be mentioned that the use of Navier-Stokes equation for analysis of flow necessitates its vindication, for the equation itself is not suitable for parting momentum transfer by different ways and for unambiguous separating of viscosity caused by dusty component. In this paper we report about the study of momentum transfer in laminar flow of dusty plasma liquid.

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