

**OBTAINING OF STABLE PLASMA-DUST STRUCTURES  
IN THE STRIATION OF A GLOW DISCHARGE IN A  
MAGNETIC FIELD UP TO 15000 G**

*Pavlov S.I.,\* Dzlieva E.S., Novikov L.A., Karasev V.Yu.*

*SPbSU, Saint Petersburg, Russia*

*\*s.i.pavlov@spbu.ru*

A number of published works devoted to the study of the behavior of dusty plasma under various influences is increasing every year. One of the possible external influences is the imposition of an external magnetic field. The dusty plasma created both in the glow discharge and in the RF discharge is exposed to the magnetic field. When observing dusty plasma in glow discharge striations in the magnetic field, the experimenters failed to create stable dusty structures when a magnetic induction is more than 1000 G. This is due to various factors, one of which is the current-convective instability of the stratified discharge in the magnetic field.

This experimental work is devoted to creation of a stable dust formation in the glow discharge striation in the magnetic field up to 15000 G. The dependence of the angular velocity of rotation of the structure on the magnetic induction is obtained. The observation revealed the range of the magnetic field in which the current-convective instability appears; a partial degradation of the dusty structure occurs.

This work was supported by a grant from the Russian Science Foundation No. 18-72-10019.