Volume dust structures in strong homogeneous and inhomogeneous magnetic field [[1]](#footnote-1)\*)

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Significant progress has been made in studies of dusty plasma in a strong magnetic field. In a case of using RF discharge a range of magnetic induction extended up to 6 T; the influence of such magnetic field on plasma processes is being investigated. In the case of glow discharge an extended dust structures were created in field up to 2.2 T; new dust traps (in addition to standing striations) were discovered and dust formation was created in inhomogeneous magnetic field.

This work studies volume dusty plasma formations in magnetic field with induction up to 2 T. Significantly different dynamics of rotational motion of dust clusters and structures in traps in striations and in region of narrowing of the current channel in a glow discharge (from 4 rad / s to 100 rad / s) was observed. Extended dusty structures made it possible to observe dusty plasma for the first time in strongly inhomogeneous magnetic field, while the rotation velocity had very large gradients.

The presented communication is a review of experimental studies carried out with dust clusters (project of the Russian Science Foundation No. 18-72-10019) and with dust structures (project of the Russian Science Foundation No. 18-12-00009).

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1. \*) [abstracts of this report in Russian](http://www.fpl.gpi.ru/Zvenigorod/XLVIII/Lt/ru/ED-Karasev.docx) [↑](#footnote-ref-1)