



ADDENDUM

Structural properties of 3D complex plasmas under microgravity conditions

To cite this article: G. Joyce *et al* 2011 *EPL* **93** 29901

View the [article online](#) for updates and enhancements.

You may also like

- [Erratum: Development of electron-tracking Compton imaging system with 30-m SOI pixel sensor](#)
Y. Yoshihara, K. Shimazoe, Y. Mizumachi et al.
- [Supergravity solutions for localized intersections of branes](#)
Akikazu Hashimoto
- [EPL's 2009](#)
Volker Dose

Addendum

Structural properties of 3D complex plasmas under microgravity conditions

G. JOYCE¹, C. RÄTH², P. HUBER², H. THOMAS², G. E. MORFILL^{2(a)}, V. MOLOTKOV³ and V. FORTOV³¹ *University of Maryland - College Park, MD 20742, USA*² *Max-Planck-Institut für extraterrestrische Physik - D-85741 Garching, Germany, EU*³ *Joint Institute for High Temperatures, Russian Academy of Sciences - Moscow, 125412, Russia*Original article: *Europhysics Letters (EPL)*, **92** (2010) 15003.

PACS 99.10.Qr – Addenda

Copyright © EPLA, 2011

In our recent paper [1], we made a statement that has since been pointed out to us as being misleading. The statement on page 15003-p3 reads “we can conclude that the 3D plasma crystal created on board the ISS is compatible with an anisotropic hcp lattice. The latter more easily explains the nature of the observed anisotropy of the complex plasmas than the ER hypothesis”. In fact, the analysis of this paper was a purely “static snapshot” analysis of structural properties, and as such does not use any dynamical information, which is also available in the data discussed. Using the dynamical evolution data it is quite clear that the system under discussion is a dynamic “string fluid” and not a static crystal. The interesting finding —that we wished to point out— is the fact that a static snapshot of such a string fluid phase appears to have a structure compatible with that of a hcp crystal at any point in time. Thus there is no conflict with the electrorheological (ER) interpretation. This is similar to another finding that a 2D fluid phase looks like a hexagonal crystal lattice (with some defects) when a static snapshot of the particle structure is analysed, although the dynamics is clearly not compatible with a 2D crystal lattice. We should also point out that Brandt *et al.* [2] have calculated the close transition between the ER fluid and hcp crystal phases and their result further supports this clarification.

REFERENCES

- [1] KLUMOV B. *et al.*, *EPL*, **92** (2010) 15003.
- [2] BRANDT PHILIP C. *et al.*, *J. Chem. Phys.*, **130** (2009) 204513.

^(a)E-mail: gem@mpe.mpg.de