

JOURNAL OF PLASMA AND FUSION RESEARCH

The Journal of the Japan Society of Plasma Science and Nuclear Fusion Research

Vol. 92, No.7, July 2016

Project Review

Small Propulsion System on the Micro-Space Probe, PROCYON:

Stories and Lessons Learned from the Development to the In-Flight Operation KOIZUMI Hiroyuki 501

Commentary

Kilotesla-Level Magnetic Field Generation with High-Power Laser and Its Applications FUJIOKA Shinsuke 514

Commentary

Refraction Effect of X-Ray Laser Beam Caused by High-Density Plasmas

-Observation of X-Ray Mirages- FAENOV Anatoly, ISHINO Masahiko and KAWACHI Tetsuya 523

Special Topic Articles

Parity in Torus Plasmas

1. Introduction ISHIZAWA Akihiro 530

2. Momentum Transport, Electric Field Formation, and Symmetry under Parity Transformation
in Torus Plasmas SUGAMA Hideo 539

3. Parity Symmetry along a Magnetic Field Line ISHIZAWA Akihiro 546

4. Multi-Scale Interaction and Parity in Turbulence/MHD System KISHIMOTO Yasuaki and LI Jiquan 552

5. Summary and Discussion ISHIZAWA Akihiro, KISHIMOTO Yasuaki and SUGAMA Hideo 564

Lecture Note

Let's Start a Numerical Simulation Today Using the Many-Core Accelerator

2. Let's Optimize a Program for Many-Core Accelerator
..... TANABE Eri, YATSUYANAGI Yuichi and HORIKOSHI Masashi 567

PFR Abstracts 573

Information 574

Plasma & Fusion Calendar 581

Announcement 583

Cover

Typical waveform of *standard shot* in MAST (merging/reconnection and Ohmic ramp-up hybrid operation). Merging plasma startup quickly heats plasmas upto hundreds of eV by magnetic reconnection, exceeds the radiation barrier of low Z impurities in the millisecond time scale and then is connected to slowly ramped Ohmic operation. This method contributes to save significant amount of solenoid flux and was routinely used for ~50% of ~30000 pulses in MAST. (H. Tanabe *et al.*, Plasma and Fusion Research, vol.11, 1302093 (2016) <http://www.jspf.or.jp/>)

Published Monthly by

The Japan Society of Plasma Science and Nuclear Fusion Research

3-1-1 Uchiyama, Chikusa-ku, Nagoya 464-0075, Japan

Tel (052)735-3185, Fax (052)735-3485, E-mail: plasma@jsofr.jp, URL: <http://www.jspf.or.jp/>