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Special Topic Article

New Prospects of Plasma Simulations Opened Up by Multi-Scale Interlocked Models

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The discovery of streamer in a cylindrical plasma in Kyushu University (Prof. S-I Itoh's Laboratory). The streamers propagating in the ion diamagnetic direction emerge quasi-periodically on the carrier drift waves propagating in the electron diamagnetic direction. (a) Temporal evolution of streamers obtained in a simulation, (b) streamers observed with an array of 64 ch. azimuthal probes (or temporal evolution of density fluctuation), and (c) the corresponding fixed point observation. (ITOH Sanae-I., Plasma and Fusion Research Vol.4, 038 (2009) <http://www.jspf.or.jp/PFR/>)