

Modern Challenges in Nonlinear Plasma Physics

June 15-19, 2009

Sani Resort, Halkidiki, Greece

<http://www.astro.auth.gr/~vlahos/kp>

A Conference Honoring the Career of Dennis Papadopoulos



In the last three decades theoretical and experimental progress has led to a substantial integration of nonlinear effects in modeling and understanding of plasma dynamics. Particle acceleration mechanisms, collisionless shocks, magnetic reconnection, and flow and wave turbulence are only a few of the facets of complex dynamics in space or laboratory plasmas. Moreover, the realistic behavior of plasmas in geospace, solar, and fusion environments is modulated by strong interactions with adjacent plasmas or boundaries. Large-scale coherence emerges even in weakly-coupled, multi-scale plasmas. Accurate modeling and prediction of nonlinear plasma systems has demanded development and use of new theoretical and numerical methods. The meeting will review recent key developments and help chart the exciting future of nonlinear plasma science.

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Confirmed Invited Speakers

V. Angelopoulos	M. Ashour-Abdalla	D. Baker	R. Bingham	S. Bulanov	C. Chang
R. Dendy	J. Drake	W. Gekelman	G. Gaguli	U. Inan	A. Klimas
M. Koepke	S. Krimigis	M. Lampe	A. Lui	G. Milikh	G. Parks
J. Pickett	E. Priest	T. Pulkkinen	M. Scholer	A. Sharma	R. Stenzel
A. Ting	M. Velli	T. Wallace	L.M. Zelenyi		

Themes

The building blocks of nonlinear plasmas

Particle Acceleration; beam-plasma interactions; collisionless nonlinear waves; plasma radiation

Meso- and macro-scale structures: formation and stability

Nonlinear evolution of instabilities; magnetic reconnection; turbulence and intermittency; maser mechanisms; storage-release processes in space and lab plasmas; large-scale coherence in plasma systems

Dynamic and interacting systems

Multiscale coupling in space and lab plasmas; bursty flows and their transitions to turbulence; plasma interaction with solid and magnetic barriers; cascades and power-law regimes

Revealing plasma structure via active experiments

Sheath electrodynamics; dusty plasmas; ionospheric modification; wave excitation and transmission



For inquiries concerning registration, accommodations, payment, travel information etc. contact plasma_physics@symvoli.gr

Abstract Submission Deadline: February 15, 2009
Pre-registration Deadline: March 15, 2009