

*Invited lecture*

**SPECTROSCOPIC STUDY OF PLASMA FLOWS CREATED  
BY A MAGNETOPLASMA COMPRESSOR**

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The results of spectroscopic investigations of compression plasma flows generated by gas-discharge and erosive magnetoplasma compressors are presented. The spatially- and time-resolved measurements of temperature and electron concentration of compression plasma flows in such quasi-stationary plasma accelerators (plasma guns) are considered. To characterize the quasi-stationary plasma flow, the special dynamic coefficients were introduced. These coefficients are calculated on the basis of the obtained temporal evolution of the electron density and temperature in plasma.

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**OVERVIEW OF SUPERNOVA MODELING WITH PHOENIX**

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I describe the use of the generalized stellar atmosphere code PHOENIX to model both Type Ia and Type II supernovae and present results that shows that both types of supernovae can play an important role in our understanding of cosmology.