ΣΑΡΑΦΟΠΟΥΛΟΣ ΔΗΜΗΤΡΙΟΣ ΤΟΥ ΒΑΣΙΛΕΙΟΥ

ΑΝΑΠΛΗΡΩΤΗΣ ΚΑΘΗΓΗΤΗΣ

ΤΜΗΜΑ ΗΛΕΚΤΡΟΛΟΓΩΝ ΜΗΧΑΝΙΚΩΝ

ΚΑΙ ΜΗΧΑΝΙΚΩΝ ΥΠΟΛΟΓΙΣΤΩΝ

ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ

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Research Field

His research efforts, for over thirty years, are primarly focussed on space plasma dynamics within the Earth's magnetosphere. Especially, his research field (traced from his original published works) could be determined as follows: Morphology and dynamics of storms and substorms in the Earth's magnetosphere. Mechanisms triggering substorms and forming magnetic flux ropes, ion jets, plasmoids and field-aligned currents. Factors determining the core's sign in flux ropes.Filamentary currents, Reconnection of magnetic field lines and Double Layers. Transient inductive electric fields, multiple acceleration centers, growth rate of acceleration source of energetic particles, plasma instabilities, circulation patterns and drifts of energetic particles, Dawn-Dusk asymmetries in energetic particles and waves, exodus mechanisms of particles toward the Solar wind, earthward leakage of ring current particles, boundary layers-Kelvin-Helmholtz instability. MHD waves, their ultimate source and propagation mechanisms, ULF Pc5 pulsations, magnetosphere response in pressure pulses and waves. Space weather, solar wind-magnetosphere-ionosphere interaction. Authentic- and pseudo-field line resonances; mechanisms producing Twin-Vortex ionosphere structures. Cavity, waveguide and global mode of oscillations. Field Aligned currents and toroidal Alfvèn waves. Dispersive structures in particles and currents: A powerful research tool discriminating spatial and temporal structures.

His works are based on experimental data obtained onboard the satellite missions of IMP-7/8, ISEE-1/2/3, GEOTAIL, WIND, ACE, POLAR, INTERBALL, CLUSTER, THEMIS, Geostationary satellites and ground-based magnetometer chains (IMAGE array, 210 degree chain, CANOPUS and GREENLAND network).

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2. **Sarafopoulos D. V., and E. T. Sarris,** Transient Field-Aligned Electric Fields inside the Plasma Sheet inferred from measurements of Energetic Particles, ***Planetary and Space Science***, 35, 991-995, 1987.
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