Scientific Profile and Scope of Expertise of the Space Physics Department

POSITION PAPER

Space Physics Department
Space Research and Technology Institute
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This Position Paper outlines the scientific profile, scope of expertise, and principles governing the research activities of the Space Physics Department at the Space Research and Technology Institute, Bulgarian Academy of Sciences (SRTI-BAS).

The document is descriptive in nature and aims to support a clear and accurate understanding of the Department's scientific expertise within the multidisciplinary structure of SRTI-BAS.

Space physics is a fundamental scientific field that provides the theoretical and methodological basis for understanding processes in the space environment and their impact on near-Earth space and technological systems.

1. Scientific Profile

The scientific profile of the Space Physics Department is defined by its fundamental and applied research in space physics, encompassing the investigation of physical processes and phenomena in the space environment, including interactions between solar activity and the Earth, and analysis of data from space-based and ground-based observations. The Department's research focuses on processes in near-Earth and interplanetary space, requiring specialised expertise in physics and applied mathematics.

These studies are essential both for the advancement of fundamental physics and for applied aspects related to space technologies and the radiation environment. They are based on established physical models, mathematical methods, and the interpretation of observational data.

Accordingly, the evaluation of scientific results shall be carried out by experts with recognised expertise in the relevant scientific field.

2. Scope of Expertise

The scientific expertise of the Department includes:

- space plasma and electromagnetic fields
- radiation environment in near-Earth space
- analysis and interpretation of data from space missions
- modelling of the space radiation environment

The evaluation of research activities within these areas requires specialised expertise from researchers with relevant qualifications in space physics or closely related physical disciplines. In interdisciplinary collaborations, the principle of clear distinction between research methodologies and the subject of investigation is maintained.

3. Role within a Multidisciplinary Environment and Interaction with Other Scientific Fields

Multidisciplinary collaboration constitutes an important element of the scientific and applied activities of SRTI-BAS. In this context, the evaluation of scientific results requires expertise from specialists with appropriate qualifications, in accordance with international scientific practice.

Within SRTI-BAS, the Space Physics Department develops specific physical expertise that complements research carried out in other units of the institute, including those in engineering and Earth sciences.

This document provides a framework for the clear and consistent presentation of the Department's scientific expertise in both national and international contexts.