
H. Fundamental Physics in Space

No sub commissions

Commission H addresses the use of space in two broadly distinct but also interrelated areas: (1) discovering and exploring fundamental physical laws governing matter, space and time, and (2) establishing organizing principles in physics from which structure and complexity emerge. The first area includes, but is not limited to, activities in gravitational and particle physics related to the testing of General Relativity and alternative theories, the search for and study of gravitational waves in space, the search for antimatter in space, the investigation of possible violations of the Equivalence Principle, the search for new hypothetical long-range forces, and the unification of the fundamental interactions of Nature. The second area includes using space to study quantum phenomena and their applications, for example, Bose-Einstein condensation, critical phenomena in superfluids, and applications of laser cooling to develop new kinds of clocks. It promotes, amongst other things, deep investigations of the role of symmetry principles in macroscopic physics, and of the extent to which renormalization group theory identifies universal and non-universal properties of complex systems.

- Commission H Highlight Talks
- Gravitation, Dark Energy and Dark Matter
- Space Missions for Fundamental Physics
- Gravitational Wave Astrophysics
- Applications (Geodesy, Metrology, Navigation, and Others)
- Enabling Technologies for Fundamental Physics Experiments and Missions