

## FOREWORD

This issue of the Ukrainian Journal of Physics includes selected papers presented as invited talks at the Symposium on High Energy Physics, Cosmology, and Gravity (October 18–23, 2010, Kyiv, Ukraine). The Symposium gathered about 100 participants from Ukraine, Austria, Belarus, Iran, and Russia and was dedicated to the 100th anniversary of the outstanding theoretician in the gravity theory and mathematician Alexei Zinovievich PETROV (1910–1972). The program of the Symposium included the following topics:

- Dark matter and dark energy;
- Early Universe and particle cosmology;
- Nonstandard cosmology;
- Neutrino physics and astrophysics;
- Ultra high energy cosmic rays and gamma ray bursts;
- Large and small scale structure formation;
- CMB, Supernovae, Weak lensing, Large scale structure;
- Slow roll and fast roll inflation in connection with the CMB and LSS data;
- CMB polarization; mathematical methods of theoretical physics;
- quantum field theory; and quantum physics experiments, *etc.*

More than 30 invited talks on these subjects were presented.

The papers were reviewed in the regular manner.

*Organizing Committee*

*Editorial Board*