

# PHYSICS– USPEKHI

English edition of *Uspekhi Fizicheskikh Nauk*  
May 1999 Volume 169 Number 5

## Contents

**Volume 42**

**Number 5  
1999**

**Pages 413–514**

### REVIEWS OF TOPICAL PROBLEMS

- Study of spatially extended dynamical systems using probabilistic cellular automata** 413  
V K Vanag
- Quantum information** 435  
S Ya Kilin

### TO THE BICENTENARY OF A S PUSHKIN

- “For what does thine sanguine divine produce my African profile?”** 453  
G R Ivanitskiĭ, A A Deev

### PHYSICS OF OUR DAYS

- Cosmic gamma-ray bursts** 469  
K A Postnov

### INSTRUMENTS AND METHODS OF INVESTIGATION

- An interference method for measuring atomic state parameters** 481  
Yu L Sokolov

*Continued overleaf*

*Contents continued*

METHODOLOGICAL NOTES

- The relation of Thomas precession to Ishlinskii's theorem as applied to the rotating image of a relativistically moving body** 505  
G B Malykin

- Physics news on the Internet** 510  
Yu N Eroshenko

BIBLIOGRAPHY

- The series *Problems of Nonuniform Physical Vacuum*** 511  
É P Kruglyakov, V A Rubakov
- Russian Academy of Sciences' Appeal** 512
- New books on physics and related sciences** 513  
E V Zakharova

# Contents

<b>Study of spatially extended dynamical systems using probabilistic cellular automata</b>	413
V K Vanag	
<b>Quantum information</b>	435
S Ya Kilin	
<b>“For what does thine sanguine divine produce my African profile?”</b>	453
G R Ivanitskiĭ, A A Deev	
<b>Cosmic gamma-ray bursts</b>	469
K A Postnov	
<b>An interference method for measuring atomic state parameters</b>	481
Yu L Sokolov	
<b>The relation of Thomas precession to Ishlinskii's theorem as applied to the rotating image of a relativistically moving body</b>	505
G B Malykin	
<b>Physics news on the Internet</b>	510
<b>The series <i>Problems of Nonuniform Physical Vacuum</i></b>	511
É P Kruglyakov, V A Rubakov	
<b>Russian Academy of Sciences' Appeal</b>	512
<b>New books on physics and related sciences</b>	513

◊ ◊ ◊

## In the next issue

*On the celebration of the jubilee of the Russian Academy of Sciences (1724–1999)*

*The problem of phase transitions in statistical mechanics*  
G A Martynov

*Approximate equations of the theory of liquids in the statistical thermodynamics of classical liquid systems*  
G N Sarkisov

*The puzzle of the lightest elements: observations, predictions, hypotheses*  
[Ya M Kramarovskii], V P Chechев

*Irreversibility and the probabilistic treatment of the dynamics of classical particles*  
S N Gordienko

*Qualitative intramolecular quantum dynamics*  
A V Burenin

*On the quantum mechanical description of the linear kinetics of a collisionless plasma*  
M V Kuzelev, A A Rukhadze

*Conferences and symposia*  
*Personalia*

*New books on physics and related sciences*  
*Physics news on the Internet*

