PHYSICS-USPEKHI

Volume 65 Number 5 2022 Pages 421-529

English edition of *Uspekhi Fizicheskikh Nauk* May 2022 Volume 192 Number 5

Russian original reference Usp. Fiz. Nauk Vol. **192**, pages English translation reference Phys. Usp. Vol. **65**, pages

Contents

REVIEWS OF TOPICAL PROBLEMS 421 457 State control in superconducting quantum processors V A Vozhakov, M V Bastrakova, N V Klenov, I I Soloviev, W V Pogosov, D V Babukhin, A A Zhukov, A M Satanin PHYSICS OF OUR DAYS 477 Networks of spike oscillators and their application 440 for creating autonomous intelligent devices V K Vanag **METHODOLOGICAL NOTES** 491 Gerstner waves and their generalizations in hydrodynamics 453 and geophysics A A Abrashkin, E N Pelinovsky 507 Finite value of the bare charge and the relation of the fine structure 468 constant ratio for physical and bare charges to zero-point oscillations of the electromagnetic field in a vacuum V I Ritus

Continued overleaf

Russian original reference Usp. Fiz. Nauk Vol. 192 , pages	referen Phys.	
	CONFERENCES AND SYMPOSIA	
527	75 years of the Atomic industry. Contribution of the Academy of Sciences (Scientific session of the General meeting of the Physical Sciences Division of the Russian Academy of Sciences, 7 December 2020)	487
528	The Academy of Sciences and implementation of the Atomic Project in the USSR (on the 75th anniversary of the Atomic industry) R I Il'kaev, L D Ryabev	488
537	Soviet Atomic Project and FIAN (on the 75th anniversary of the Atomic industry) B L Altshuler	497
547	RFNC-VNIIEF research facilities aimed at experimental acquisition of basic and applied knowledge in the fields of nuclear, radiation, and fast-process physics (on the 75th anniversary of the Atomic industry) N V Zavyalov	on 507
	PERSONALIA	
565	Oleg Igorevich Korablev (on his 60th birthday) Yu Yu Balega, D V Bisikalo, A M Bykov, V V Zheleznyakov, L M Zelenyi, V V Kveder, G F Krymsky, M Ya Marov, N N Rozanov, A V Stepanov, A M Cherepashchuk, B M Shust	523
	BIBLIOGRAPHY	

New books on physics and related sciences

E V Zakharova

PHYSICS NEWS

Yu N Eroshenko

Physics news on the Internet

525

528

567

564