

**BULLETIN OF THE RUSSIAN ACADEMY OF SCIENCES. PHYSICS  
SUPPLEMENT**

**PHYSICS OF VIBRATIONS**

Volume 59, Number 3, 1995

**CONTENTS**

**FLUID DYNAMICS**

- Waves on a Steady Nonuniform Current  
*K.I. Voliak and A.M. Schermentev* ..... 119
- On the Existence of Generalized Solitary Waves in Media with Weak Dispersion  
*A.T. Il'ichev*..... 130

**WAVE PROPAGATION IN INHOMOGENEOUS MEDIA**

- Coherent Scattering of Electromagnetic Waves in Inhomogeneous Ionization of a Gaseous Medium  
by Hard Radiation  
*N.V. Suyazov* ..... 141
- Excitation of Acoustic Vibrations in a Conducting Medium by Ultralow-Frequency  
Electromagnetic Radiation  
*G.A. Lyakhov and N.V. Suyazov* ..... 150

**NONLINEAR ACOUSTICS**

- Nonlinear Processes in an Acoustic Resonator Filled with Fluid: Theory and Applications  
*O.V. Umnova and K.F. Shipilov* ..... 158

**LASER REMOTE SENSING**

- Recording Vertical Structure of Optical Characteristics of the Upper Ocean by a Method  
of Local Gradient Extrema of Lidar Return  
*E.V. Zubkov and A.F. Bunkin*..... 165

**ULTRASOUND**

- Estimating the Rate of Producing Artificial Cellular Membranes in an Acoustic Field  
*A.V. Krasnoslobodtsev and G.A. Lyakhov* ..... 173