
Contents

Vol. 57, No. 3, 2014

A simultaneous English language translation of this journal is available from Allerton Press, Inc.
Distributed worldwide by Springer. *Russian Aeronautics (Iz. VUZ)*, ISSN 1068-7998.

Aircraft Equipment

Special Operation Features of a Power Efficient Control Actuator for Promising Mobile Objects

A. N. Gerashchenko, N. I. Kulikov, A. V. Makarenko, and A. E. Sorokin 217

Flight Vehicle Design

Estimates of Hover Aerodynamics Performance of Rotor Model

L. I. Garipova, A. S. Batrakov, A. N. Kussyumov, S. A. Mikhailov, and G. N. Barakos 223

Structural Mechanics and Strength of Flight Vehicles

Analysis of a Shell of Revolution Subjected to Axisymmetric Loading Taking into Account Geometric Nonlinearity on the Basis of the Mixed Finite Element Method

N. A. Gureeva, Yu. V. Klochkov, and A. P. Nikolaev 232

Fracture Mechanics Analysis of Cylindrical Panels with Non-Through Cracks

S. V. Glushkov and Yu. V. Skvortsov 240

Flight Dynamics and Control of Flight Vehicles

Asymptotic Analysis of the Secondary Resonance Effects in the Rotation of a Spacecraft with Small Asymmetry in the Atmosphere

V. V. Lyubimov 245

Aero- and Gas-Dynamics of Flight Vehicles and Their Engines

Methods of Constructing Quasisolutions in Inverse Boundary-Value Aerohydrodynamics Problems

P. N. Ivan'shin 253

Mixers Based on a Variable Geometry Ejector

I. A. Lepeshinskii, Yu. V. Zuev, V. A. Reshetnikov, and I. V. Antonovskii 260

The Engineering Model of Non-Equilibrium Flow

Yu. A. Nikitchenko 266

Aircraft and Rocket Engine Design and Development

The Problem of Determining the Design Parameters of the Gas Turbine Engine for a Helicopter

V. A. Grigor'ev and A. O. Zagrebel'nyi 272

Blade Geometry Transformation in Optimization Problems from the Point Cloud to the Parametric Form

L. S. Shablii and I. B. Dmitrieva 276

Aircraft and Rocket Engine Theory

- Modeling of Pollutant Emission from the Combustion Chamber of a Stationary Gas Turbine Drive
I. A. Zaev, B. V. Potapkin, S. A. Fedorov, and V. V. Kuprika 283
- Joint Prediction of Aircraft Gas Turbine Engine Axial Flow Compressor Off-Design Performance and Surge Line Based on the Expanded Method of Generalized Functions
A. B. Mikhailova, D. A. Akhmedzyanov, Yu. M. Akhmetov, and A. E. Mikhailov 291
-

Aircraft Instruments and Instrumentation Computer Complexes

- The On-Line and Postflight Probabilistic Guaranteed Assessments of the Operational Status of Airborne Systems
V. N. Evdokimenkov, R. V. Kim, A. B. Vekshina, and A. A. Voronov 297
-

TECHNICAL NOTES

Flight Dynamics and Control of Flight Vehicles

- Terrain Object Recognition in Unmanned Aerial Vehicle Control System
S. A. Lyasheva, M. V. Medvedev, and M. P. Shleimovich 303
-

Aircraft and Rocket Engine Design and Development

- Automatic Control System of Active Magnetic Suspension in Turbomachine Rotor
Yu. K. Evdokimov, T. A. Izosimova, and A. V. Davydov 307
- Application of a Hydrogasdynamic Axial Vibration Damper for Reducing GTE Vibration
S. V. Falaleev and V. B. Balyakin 314
-

Aircraft Instruments and Instrumentation Computer Complexes

- Backup Strapdown Attitude Control System on the Russian-Made Inertial Sensors
P. P. Paramonov, A. V. Shukalov, V. Ya. Raspopov, Yu. V. Ivanov, and A. P. Shvedov 319
-

Aircraft Production Technology

- Surface Hardening Influence on the Fatigue Limit for Cylindrical Parts of Different Diameter
V. F. Pavlov, V. A. Kirpichev, V. S. Vakulyuk, and V. P. Sazanov 324
-
-