**"Gyroskopiya i Navigatsiya" №2, 2002**

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| In designing vibratory micromechanical gyroscopes (MMG) a contradiction occurs between the angular rate sensitivity requirements and the necessary working frequency band. This contradiction can be eliminated by constructing a compensation type device. The paper deals with the use of integrating properties of a vibratory MMG working in a resonant adjustment mode while forming Coriolis torque compensation loop. Nature of motion along the resonantly adjusted MMG output axis is considered with a constant angular rate and the one changing harmonically, transfer function and gain-frequency characteristic from the "envelope curve" of output signal are determined under operation in the open loop. It is shown that if MMG oscillator is not damped (0), the transfer function corresponds to the integrating link, and with a finite value of  - to the aperiodic link. Construction of compensation loop for Coriolis torque acting on MMG with the con-trol along the "envelope curve" of modulated signal makes it possible on retention of resonant adjustment of oscillator to provide the required working frequency band without desensitizing the device with regard to external angular rate. |  |

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| Basing on the analysis of construction principles for multicomponent metering devices, the advantages of applying accelerometers in aerospace instrument making are justified on the basis of full magnetic suspension of a one-mass countermeasure feeler. The design is described and the functional diagram of the precision sixcomponent accelerometer is adduced. The mathematical model of the virtual accelerometer developing all coordinates of vectors of linear and angular accelerations is discussed. |  |

**Materials of the 9th St. Petersburg International Conference
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| **Yu.P Semenov, V.P. Legostaev, B.Ye. Chertok, V.P. Gavrilov, G.A. Berzin, V.A.Udaloy, S.G. Revnivykh, V.N. Pochukaev** | **High Elliptical Orbit-Based Informational and Navigational Functional Augmentation of Global Navigation Satellite Systems** | **37** |
| This paper presents a concept for a Russian space-based wide-area functional augmentation of global navigation satellite systems (GNSS). This augmentation was given the name of Informational and Navigational Functional Augmentation (INFA). In contrast to WAAS and EGNOS systems using for relay satellites SC in GEO, the space segment of INFA consists of SC based on Yamal bus flying in High Elliptical Orbits (HEO) of Tundra type. The paper provides a rationale for the desirability of creating INFA for Russia, with its large area and northerly location. |  |

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| **A.A Elizarov, B.S. Konovalov, S.F. Konovalov, D.V. Mayorov, A.V. Polynkov, A.A. Trunov,V.V.Yurasov, Kwan Sup Lee** | **System of Diagnostics of a Construction Structure State** | **46** |
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