**"Gyroscopy and Navigation" №3, 2001**

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| The present paper considers the problem of the safety assessment for ships track under passing with other vessels (OV). Such problem arises then for ships collision avoidance the passing track is used. In this case the own ship (OS) motion is carried out on the previously generated track. This track has the form of linearly broken curve. Safety measure for passing track admits to compare different recommended tracks and make decision that track is best suited to our operation. As a measure of track safety is taken the probability of lack of OS collision with all OV. For assessment of such measure the possible OV actions are taken into account. For each OV the set of safety passing track is generated. A generation of track and safety assessment is founded on the model of OV mariner actions as an intelligent agent. Each agent has a form of the dynamical system which is controlled by knowledge. Example of safety assessment is worked out in detail. | |  |
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| In this paper the problem of automatic ships passing trajectory synthesis is considered. The concept for solving this problem for one of the complicated ship navigation tasks is presented. The principles of derivation concept for tools of the mariner's intelligent support are stated. These tools are represented as a program module realized in the suggested framework for trajectory synthesis. The synthesized passing trajectory has the form of linearly broken curves, satisfies the requirements of International Regulation for Preventing Collision at Sea and is optimal as regards the minimum deflection from the initial programmed path. The simulation results for the ships passing problem are presented. | |  |
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**Papers of the 8th Saint Petersburg International Conference  
on Integrated Navigation Systems**

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| **S.S.Gurevich, V.Z.Gusinsky, B.Ye.Landau, V.M.Lesyuchevsky, S.L.Levin, Yu.A.Litmanovich, V.G.Peshekhonov, V.N.Tsvetkov** | **An Attitude Reference System with Solid-Rotor ESGs for Orbital Satellites** | **63** |
| The research-and-production enterprise Medicon is performing the project on making the gyroscopic module for an, inclinometer intended for surveying while drilling of inclined and horizontal wells and for well logging. The basis of the : gyroscopic module is the hemispherical resonator gyro (HRG), modified for activity in the structure of an inclinometer. The first stage of the project is dedicated to the making and trial of a modified HRG. The results of the activities at this stage are presented in the current report. | |  |
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**Brief notes**

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| |  |  |  | | --- | --- | --- | | **John Mark, Daniel Tazartes, Randall Curey** | **Partitioned Executive Structure for Real-Time Embedded Software Applications** | **83** | |  | |  | | **V. Logozinski, I.Safoutine, V. Solomatin** | **Fiber Optic Gyro with Digitally Corrected Output** | **93** | | The "open loop" fiber optic gyro with a digitally corrected output is described. The developed sensor is traced to VG910F by optics and analog electronics design. The digital correction of raw analog data has been implemented in VG991D to improve bias and scale factor stability over temperature and to linearize output.   The developed correction algorithm is based on the error model and realized as a polynomial approximation on set of parameters (temperature, output voltage).   The digital board were developed and integrated into the sensor additionally to analog electronics. This board digitizes set of analog signals, processes them in accordance to predetermined algorithm and provides external serial port RS485. Key design features and test data of the new sensor are presented. | |  |   **Academy of Navigation and Motion Control Official information**   |  |  | | --- | --- | | **To the 90th anniversary from S.F. Farmakovsky birth** | **103** |   **Pages of History**   |  |  |  | | --- | --- | --- | | **S.S.Rivkin** | **Development of the probabilistic approach to the gyroscopic devices research realized by á.á.Sveshnikov** | **105** | |  | |  |   **Information**   |  |  | | --- | --- | | **Materials of the joint meeting of the Bureau of Navigation Systems and Their Sensors Section and the Saint Petersburg Section of Precise Gyroscopy of the RAS scientific council on the problems of motion control and navigation** | **115** |  |  |  | | --- | --- | | **Hemispherical resonator gyro (paper abstracts)** | **123** |  |  |  | | --- | --- | | **Russian and international conferences, symposiums, and exhibitions** | **126** | |