**"Gyroskopiya i Navigatsiya" №4, 2008**

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| Considered is the method of ambiguity resolution for satellite-based GPS phase measurements, which takes into account the specific character of the problem of spacecraft relative navigation. This method provides for obtaining a fixed and a floating solution. Distinction of the proposed fixed solution consists in its layout into two stages and in more efficient arrangement of the integer search of phase measurement periods. At the first stage of the fixed solution the most probable value of the phase period integer is retrieved. At that, the exhaustive search of the period integer is not performed. High speed of this stage implementation is provided by the fact that the domain, in which searching is executed, is being continuously narrowed as far as new "candidates" for a more probable value are found. The second stage serves for estimating a posterior probability of a determined value of the period integer. It is essential that the estimation of a posterior probability is formed step-by step in the course of exhausting searching for possible values of the period integer. Moreover, the value of an estimate of posterior probability monotonely decreases while new integer values are being registered. Owing to such a method it becomes possible to abandon an uncertain fixed solution without complete calculation of its posterior probability and exhaustive search of all possible phase period values. |  |
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* the parameters are evaluated jointly with the AU installation errors using the statistical estimation methods to smooth over the measurement errors,
* an iterative procedure is used to exclude the model inadequacy in the case of large installation errors.

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