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# Kalman filter in the problem of homing

© Yu.V. Zhuravlev

Bauman Moscow State Technical University, Moscow, 105005, Russia

*We studied a simple kinematic model of guidance system for counter-overtaking modes. The maneuver target is modeled by stationary correlated random process. We use Kalman filter to estimate the coordinates of the phase state of the kinematic link, namely, the angular velocity of the line of sight and the normal acceleration of the target. The system of differential Riccati equations for the covariances of the errors due to the nonstationarity and nonlinearity in closed form is not amenable to study. However, in three special cases we found its closed solution in graphical or analytical forms. The need of simulation with the purpose of determining applicability of the obtained results is shown.*

**Keywords:** homing system, the kalman filter, the riccati equation.

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**Zhuravlev Yu.V.** (b. 1947) graduated from the Moscow Aviation Institute in 1974 and Lomonosov Moscow State University in 1981. Senior lecturer of the Department of Computational Mathematics and Mathematical Physics at Bauman Moscow State Technical University. Author of more than 20 scientific publications in the field of modeling, identification, control of dynamic systems. e-mail: zhurjurwas270747@yandex.ru

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