

CONDITIONS OF OPTIMAL TRAJECTORY OF VEHICLE MOTION WHEN LOCATING SENSORS IN ZONE OF EMERGENCY

The paper deals with a mathematical statement and solution of the problem for searching a condition of an optimal trajectory of the vehicle when the wireless network sensors are located in the zone of emergency.

The conditions examined result in the determination of the optimal coordinates and time for branching a trajectory, as well as the optimal controls and trajectories of the airdropping cargo (mobile sensors) motion to predicted targets along individual trajectory branches after separating from the vehicle.

The scientific novelty of the results presented lies in the fact that the research problem of the development of the optimal conditions of the motion trajectory of the aerial platform incorporated into the wireless sensor network with mobile sensors in the sensor network deployment is first studied and resolved using the theory of an optimal control.

Keywords: *minimum principle, optimal control, mathematical model, needed optimality condition, mobile sensor.*

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