

## Analysis of the movement of the load during the interaction of wind force

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*Abstract:* The present work pertains to the analysis of the load movement during the interaction of wind force. The load was treated as a rigid body, and the linear system model as a non-deformed. The influence of effective area of wind force on load movement was considered. Various shapes of the rigid body and different values of wind velocity were also analyzed. To define the orientation of the movable Cartesian coordinate system related to the load, Bryant angles were used. An algorithm and computational program were developed to allow for the analysis of dynamic phenomena. The initial problem was solved by means of the ode45 calculation procedure in the Matlab software on the basis of the Runge-Kutta 4th Order Method. The obtained results were compared with the experimental results achieved using the wind tunnel and the results get in the commercial program. After taking into account the control functions resulting from the nature of the work of any machine, the formulated model can be a full description of the movement of the carried load taking into account external forces.

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