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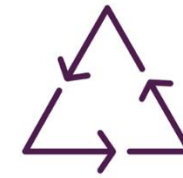
CAMSTech
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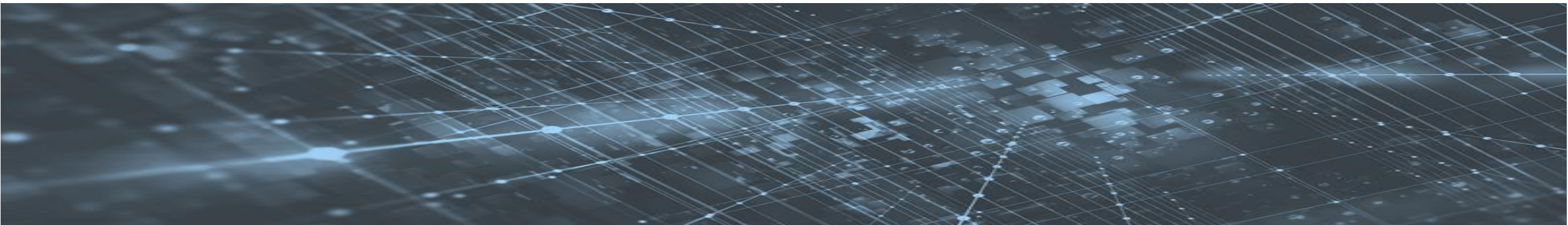
**«Simulation of layout schemes of soil-throwing machine-tractor units
based on articulated load-bearing machines»**

Authors M A Gnusov, M V Drapalyuk, M N Lysych, D Yu Druchinin, A F Petkov



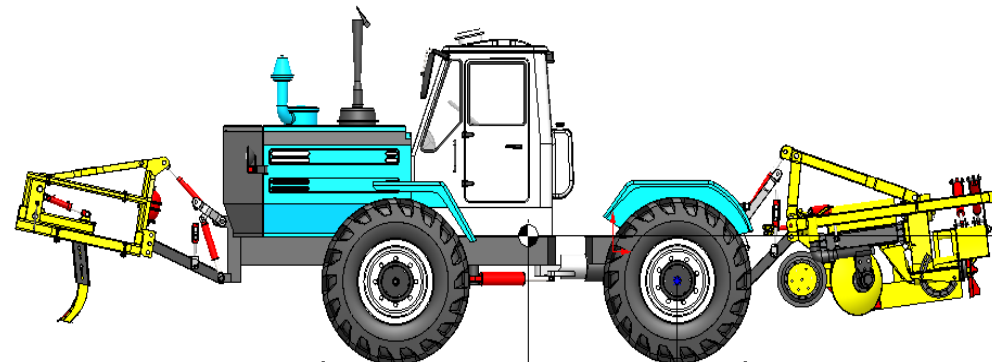
Problem statement

- The use of three-dimensional solid-state modeling tools allows you to effectively investigate the mass-inertial characteristics of machine-tractor units. This is especially true when designing new tools and working out possible schemes for its aggregation with a base tractor. So, for example, units used to extinguish forest fires must have increased resistance to rollover and at the same time maintain high maneuverability and mobility



Solution methods

- In the process of the study, the simulation method in the 3D-CAD environment of the SolidWorks system was used. At the first stage, three basic mass-produced models of wheeled traction devices were selected. This is the T-150K tractor, the DZ-122 grader and Amkodor 2661-01 forwarder. Then its simplified 3D models were created, while all the basic geometric parameters of the traction means were saved.





Conclusions

Results, implementation

The created models of soil-throwing units make it possible to evaluate the overall dimensions and mass-inertial characteristics of various options for assembling the units, its longitudinal and lateral stability. In the future, the obtained models can be used for static stability calculations in a dynamic setting and virtual studies of dynamic stability when moving on various surfaces that simulate various elements of the forest macro and microrelief. For this, the integrated MBD application for engineering calculations SolidWorks Motion can be used, or exported to specialized programs, for example, MSC.ADAMS or RecurDyn.

Contacts

M A Gnusov, M V Drapalyuk, M N Lysych, D Yu Druchinin, A F Petkov
Ministry of Science and Higher Education of the Russian Federation, Voronezh
State University of Forestry and Technologies named after G.F. Morozov, 8
Timiryazeva Street, Voronezh 394087, Russian Federation
mgnusov@yandex.ru

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