

INTERNATIONAL CONFERENCE  
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# «Metrological Support of Innovative Technologies» ICMSIT-2020

«Theoretical study of forest fire extinguishing machine use»

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**ICMSIT-2020**  
Metrological Support  
of Innovative Technologies

# Problem statement

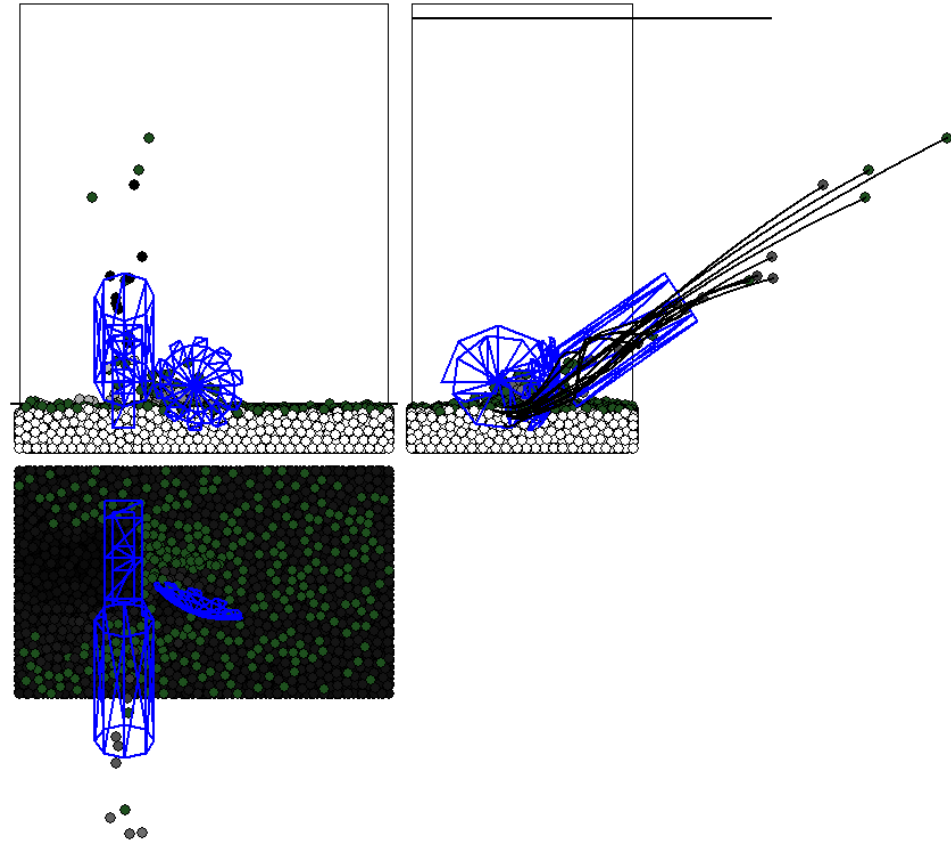
Currently, the problem of forest fires has become especially acute, especially in the summer, as the weather conditions of recent years provoke drought and, as a result, a fire hazardous situation for forestry. Forest fires cause irreparable harm to the entire planet. Soil in forests is available in unlimited quantities and has a special prospect for use as a fire extinguishing agent. Additional theoretical studies of the process of eliminating forest fires with soil are required for the subsequent development of effective means for extinguishing forest fires.

1. Development of a constructive design of a machine for eliminating forest fires
2. Development of a simulation physical and mathematical model of the interaction of the unit with the working environment (soil).
3. Development of a computer program for the implementation of a simulation physical and mathematical model of a machine for extinguishing forest fires.



# Solution methods

In describing the mechanical behavior of all the constituent parts, a particle dynamics method is used to create a soil simulation environment.



# Conclusions

Results, implementation

The physical and mathematical model and computer program have been developed for carrying out computational experiments on soil throwing by a machine, which allow us to study the influence of structural and technological parameters of the machine, as well as the properties of the soil on the performance indicators of soil throwing.

# Contacts

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