

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
Interactive Presentations (IP)

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SPACE ORIENTED SCIENTIFIC AND EDUCATIONAL PROGRAMME IN THE FIELD OF BASIC  
ENGINEERING AT CHILDREN'S SUMMER CAMP

**Abstract**

Engineering activity of children and young people is the important tool of primary polytechnic education. Such activity helps to facilitate the formation of the sustained interest in science and technology and develops innovative technical thinking, as well as raises the scholar level of education.

Currently, there is a global challenge to find new approaches to involve more young talented people into STEM and to raise their level of education.

This report focuses on the issue of how to maintain and expand new basic engineering programmes at children's summer camps. One of such programmes was implemented in camp-seminar format by Bauman Moscow State Technical University employees at one of the leading Russian children's centres in summer 2016.

The camp-seminar is a 20-days course that provides participants with a balanced combination of seashore recreation, cultural, scientific and educational activities. The camp-seminar can be attended free of charge by winners of scientific, technical and academic contests held by the University, so school students are motivated to participate in such competitions and, therefore, to upgrade their achievements.

The research and educational programme is a complex of training modules aimed at improving the skills of young people in STEM. These modules also include associated applications and attract the best talents into technical and scientific careers. In 2016, four modules were successfully implemented: Programming, Soldering, Space robotics, and Measurements in nature and technology. In the near future, another four modules, such as Rocket modelling, are expected to be added. Each module covers 24 academic hours and is mainly focused on getting practical skills in the relevant field. Each module ends up by team competitions. Intensive training, competitive environment and teamwork develop school children's cooperative skills and help them to achieve good results.