

New technical solutions for obtaining additional information about non-stationary processes in ballistic experiments

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The article presents the laboratory technology for body accelerating in a ballistic experiment allowing for ballistic process detailed visualization in a full cycle. A series of experiments with a high-speed recording of the process from the beginning of the movement of the measuring probe and the wire of the electrical link in the launcher until the probe movement termination in the target was performed. A number of design variants of the probe with an external diameter, both smaller and equal to the internal diameter of the launcher, was investigated. Based on the analysis of the video images of the form of the electrical wire connecting the probe to the recorder, conditions are determined that ensure the reliability of recording of the parameters of the probe movement on the flight path and in the target. As a result of additional research, technical solutions have also been proposed for carrying out experiments in laboratory and field conditions and the use of measuring probes, which are thrown using detachable master devices.

Keywords: measuring probe, ballistic experiment, electric communication wire, process visualization, technical solutions

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