

## ABSTRACT

The master's dissertation consists of four sections, which contain 110 pages, 76 illustrations, 26 tables and 15 used information sources.

**Purpose:** development and research of an automated camera stabilization system for hand-held shooting.

**Relevance:** as scientific and technological progress does not stand still and society is constantly evolving, the requirements for the quality of photos and videos are growing. The use of cameras continues to grow every year: security and recording systems, professional and amateur cameras, cameras in phones and much more. Television and film production are widely used for scientific, educational, informational and entertainment purposes. Shooting is often done from land, aircraft, surface and underwater moving objects. In such conditions, cameras are often prone to vibration or vibration of the moving base where they are mounted. To obtain high-quality videos and photos, the device must be stabilized to reduce these vibrations.

**The subject of research** is the developed camera stabilization system.

**The object of research** is the technical, metrological characteristics of the system, transient process and frequency characteristics.

**The first section** reviews the most common stabilization methods and factors influencing the quality of shooting.

**The second section** considers materials on the theory of gyroscopic stabilizers.

**In the third section** we designed the stabilization system, developed its structural scheme and calculated transfer functions. The results were analyzed and the transient, frequency and logarithmic characteristics were constructed. The system was tested for stability. Research of the impact of design parameters on system performance was also conducted.

**In the fourth section** the basic stage of the startup project was developed and the results were analyzed.

**Key words:** stabilization, stabilization system, camera.