

## **Abstract**

The fulfillment of the tasks assigned to the spacecraft and ensuring the reliability of its operation is impossible without an effective power supply system, including a battery of photovoltaic cells (PC) and a drive for its orientation to the sun.

The efficiency of using the solar battery (SB) is determined by the amount of electricity supplied from the SB to the spacecraft power supply system. This value depends on the illumination of the active surface of the SB by the solar luminous flux. The optimal position of the solar cells during the operation of the spacecraft is the position at which the direction to the Sun coincides with the normal to the active surface of the solar cells. A deviation from this position leads to a decrease in energy supply to batteries from the Sun and, as a consequence, to a decrease in the efficiency of using solar cells.

By now, standard solar installations have several disadvantages.

To solve the problem of reducing the effectiveness of the use of SB, an orientation system of the SB is required. The SB orientation system is a device that periodically orients solar panels or a concentrator to the sun, as a result of which more sun rays reach the surface and more electricity is generated.

At present, fundamentally new self-adjusting gear transmission mechanisms have appeared with completely absent control.

The essence of the opening is a mechanism with two degrees of freedom, which has a movable closed loop and an additional frictional connection, has the property of independently adapting without a control system to a variable external load.

The work is devoted to the theoretical description of a self-regulating gear mechanism and the creation of a highly efficient drive for solar batteries of a spacecraft.

