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**MODELING LOW-POWER SMALL HYDRO-ELECTRIC STATION WITH A FLYWHEEL THAT
AUTOMATICALLY REGULATES THE INERTIA MOMENT**

The paper proposes a dynamic model of low-power small hydro-electric station, in which frequency stabilization is based on the use of a flywheel with automatically controlled mass, inertia moment and water flow, which is fed to the inlet of the hydraulic turbine. Watt's governor is the gauge of the hydraulic turbine rotational speed. For computer simulation of small hydro-electric station, the capabilities of MATLAB are used to solve rigid systems of nonlinear differential equations. The simulation results showed the high efficiency of the proposed method for the stabilization of a hydraulic turbine rotation, and therefore the stabilization of the voltage frequency of the electrical energy produced by the small hydro-electric station.

Keywords: small hydro-electric station, flywheel, simulation, frequency stabilization, hydraulic turbine, Watt's governor.

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