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MATHEMATICAL MODELS OF THE VIBRATION CAVITATION OF RESERVOIRS AND ENGINEERING STRUCTURES

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ABSTRACT

The article "Mathematical models of the vibration cavitation of reservoirs and engineering structures" describes the effect of vibration on the pipes in the waters of the Karkidon reservoirs. At the end of the pipeline from the discharge and when it is fully opened or closed, part of the mass of water accumulated in the tank and the water supply pipe of the tap begin to move or stop. But the real liquid, which is elastic, does not move or stop in one zone, but gradually shrinks or solidifies from the floor (starting with the layer on the door valve). At the same time, the pressure increases to a certain value (pulse pressure). Elastic compression deformations and increased pressure spread to the upper flow and over time reach the end of the pipe. At the same time, the space in the distance is filled with liquid from the reservoir. Analytical expressions are given for the moment of Impact time and the amplitude of the shock wave.

KEYWORDS: Vibration, Resonance, Transverse Waves, Disturbance Waves, Cavitation Zone, Initial Section of Pipe Rotation, Velocity Axis & Radius of Curvature During Rotation.

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