

The Research of Water Levels in the Zhinvali Water Reservoir and Results of Field Research on the Debris Flow Tributaries of the River Tetri Aragvi Flowing in It

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Abstract : In the article to research water levels in the Zhinvali water reservoirs by field and theoretical research and using GPS and GIS technologies has been established dynamic of water reservoirs changes in the suitable coordinates and has been made water reservoir maps and is lined in the 3D format. By using of GPS coordinates and digital maps has been established water horizons of Zhinvali water reservoir in the absolute marks and has been calculated water levels volume. To forecast the filling of the Zhinvali water reservoir by solid sediment in 2018 conducted field experimental researches in the catchment basin of river Tetri (White) Aragvi. It has been established main hydrological and hydraulic parameters of the active erosion-debris flow tributaries of river Tetri Aragvi. It has been calculated erosion coefficient considering the degradation of the slope. By calculation is determined, that in the river Tetri Aragvi catchment basin the value of 1% maximum discharge changes $Q_{1\%} = 70,0 - 550,0$ m³/sec, and erosion coefficient - $E = 0,73 - 1,62$, with suitable fifth class of erosion and intensity 50-100 tone/hectare in the year.

Keywords : Zhinvali soil dam, water reservoirs, water levels, erosion, debris flow

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