Hamid Reza Sheibani

Assistant professor
Engineering Department
Payame Noor University

Address:	No: 9, Firoozbakhsh Ave., Aghdassieh St.
	Engineering Department
	Central Organization of Payame Noor University
	Tehran, Iran
Tel:	0098-21-26120017
Fax:	0098-21-26120013
Email:	*sheibani@pnu.ac.ir*

EDUCATION

- PhD in Hydraulic Structures
  Civil Engineering Department, Amirkabir University of Technology (Poly Technique Tehran), Tehran, Iran 2004

LECTURING   EXPERIENCES

- Hydraulic structures
- Fluid mechanics
- Hydraulics
- Hydraulic laboratory
- Design of canal structures
- Statics

PAPERS

- Sheibani H., Bayyat H. (2004) "Hydraulic analysis of overtopable gabion dam", Pajohesh and Sazandegi j., No: 63, P 85-94
- Sheibani H., Bayyat H. (2007) "Velocity profile and Reynolds shear stress in overflow gabion dam crest", Esteghlal j., Vol 26, No:1, P 13-25

SUMMARY OF PhD RESEARCH

- **Title:**

Hydraulic Analysis Modeling of Gabion Dam with Sealed Upstream Face

Aim of this research was development of two dimensional mathematical model and also physical model to simulate of steady state flow through/over overtopable gabion dam. Upstream side of this dam is completely sealed. Flow through gabion dam was turbulent therefore forchhiemer and continuity equation with appropriate boundary conditions were used for modeling the flow. Equation constants were obtained by using of physical model simulation. Results of mathematical model were verified by physical test results. Pizometers were installed at the bottom and wall of flume. These pizometers show water pressure in dam porous body. Flow over dam crest is also a turbulent flow. Mathematical simulation of that flow was done by $k - \varepsilon$ equations. Physical model test and laboratory results were used for calibration of the mathematical model. These results also are used for investigation of the mathematical model correctness. Instantaneous velocity components were measured in physical model at top of the gabion dam crest by ADV (Aqustic Doppler Velocimeter). Average amounts of velocity components, turbulence parameters and turbulence shear stress extract from ADV output. The results of this research are:

- New formula was produced for modeling spatially varied flow over gabion dam. This formula can use for determination of water surface location.

- Flow through gabion dam is two dimensional and therefore forchhiemer constants are different in each direction.

-Velocity profile over gabion dam crest has a logarithmic distribution. But it is different from usual distributions that are applicable over a non porous surface.

- Turbulence shear stress over gabion dam is increased by suction of flow through dam crest.

- Pressure distribution in length of crest in flow direction is different from hydrostatic distribution by suction of flow through crest surface. The ratio of those two distributions is variable through the length of the dam crest.