



**MINISTRY OF HIGHER AND SECONDARY
SPECIALIZED EDUCATION OF THE REPUBLIC OF
UZBEKISTAN**

**TASHKENT INSTITUTE OF IRRIGATION AND
AGRICULTURAL MECHANIZATION ENGINEERS**

**«INTERNATIONAL CONFERENCE ON
INFORMATION SCIENCE AND COMMUNICATIONS
TECHNOLOGIES ICISCT 2019»**

**THE IMPORTANCE OF MOBILE APPLICATIONS IN THE
USE OF STANDARD WATER MEASUREMENTS**

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TASHKENT-2019

INTRODUCTION

The recent global climate changes made difficult of planning and fair distribution of water resources. Main reasons are: the reliability of water resources forecasting and the increasing accuracy and consistency of accounting of existing water resources. So, the main criterion of the rational water management is to improve its calculations.

FORMULATION OF THE PROBLEM

In the reform of the Republic of Uzbekistan, the priority of the state policy is the development and modernization of irrigation and water management, wide introduction of innovative technologies in this sector. In all sectors main attention is paid to the wide introduction of water-saving technologies in agriculture due to the limited water resources in hot and dry climates

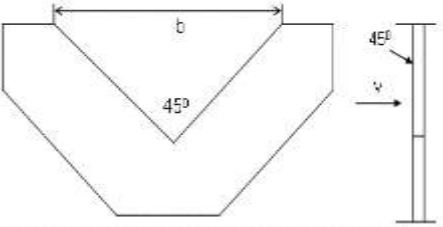

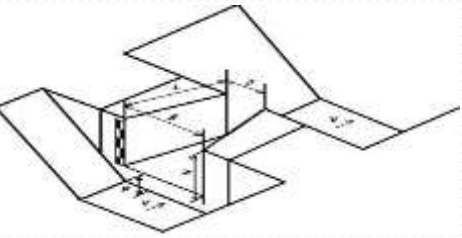
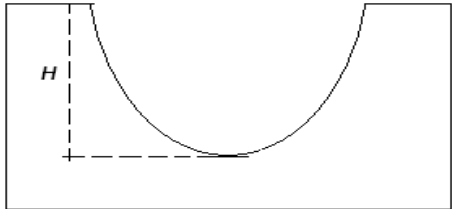
METHOD

However, it should be noted that each district, region, and farms are located in different geographical conditions, and their location, soil, relief, geology and hydrogeology and amelioration condition are different. For the determining water consumption in open irrigation channels, it is necessary to take into account several hydro-morphological parameters, as:

$$Q = f(\mathcal{V}, h, b, \varpi, d) \quad (1)$$

\mathcal{V} - mean flow velocity, m/sec; h - flow depth, m; b - flow width, m;
 ϖ - hydraulic magnitude, mm/sec; d - diameter of the river bed ground, mm.
Determination of the above hydro-morphological parameters in the field requires the use of separate methods and tools.

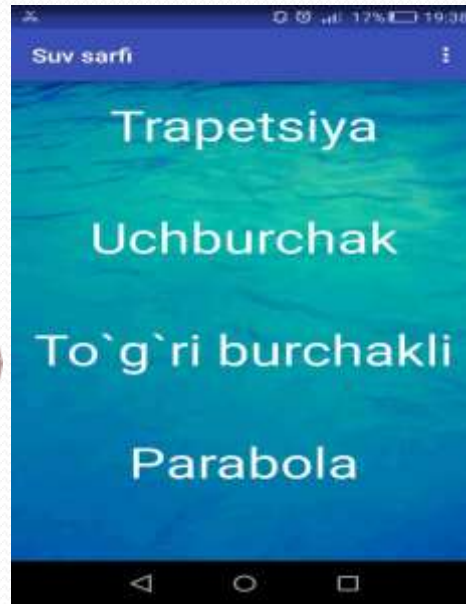
STANDARD WATER METERING DEVICES ARE USED IN IRRIGATION NETWORKS

Name of the water meter	Appearance	Calculation formula	Symbols
Thomson		$Q = 1.4H^{5/2}, \text{ m}^3/\text{sec}$	<i>H</i> - water level in the conduit threshold, cm.
Chipoletti		$Q = 1.86bH^{3/2}, \text{ m}^3/\text{sec}$	<i>b</i> - Width of culvert threshold, cm.
SANIIRI water measuring bar		$h/H < 0,2$ $Q = 1.72 \cdot b \cdot H^{1,5} \text{ m}^3/\text{sec}$	<i>b</i> - width of the outlet of the device, cm.
Parabolic Water Conductivity		$Q = 0,576 \cdot H^2 \text{ m}^3/\text{sec}$	<i>H</i> - water level in the conduit threshold cm.

RESULTS

The Hygrometry mobile app enables you to quickly and accurately calculate water consumption on all standard water metering devices in the irrigation network. Calculation time is only concerned with monitoring the water level in the system, and the results are achieved when the data is entered into the program. The proposed "Hygrometry" mobile application is created not only for mobile phones, but also for tablets and computers. This program is written in Java programming language and can be used by all kinds of smart phones. In Fig 1 shown the instructions for using the mobile application.

RESULTS



CONCLUSION

The first steps in this direction were the development of mobile application on Android 5 platform written in Java programming language. This mobile application can be used to calculate water discharge by any standard water meter today. Therefore, this mobile application is the first step in the ability to remotely manage water resources in the inland irrigation network and the development of research in this area is an urgent task today.



**THANKS
FOR
ATTENTION**