

## THE USE OF INTERNET AND WEB TECHNOLOGIES APPLIED TO THE BALWOIS INFORMATION SYSTEM

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The main activities of BALWOIS network are :

(I) the implementation - at the Balkans scale - of a Water Observation and Information System for Decision Support which collects and combines various data and information on the water cycle, on the water resources, on their natural environment and on their uses,

(II) the organisation of conferences, workshops , scientific visits and training courses :

for promoting a regional and multidisciplinary approach (Hydrology, Climatology, Hydrobiology, Ecohydrology, Socio-economy, etc.)

for encouraging scientific exchanges between researchers from Balkan institutions and

for offering them opportunities to improve their networking at global level and more specifically to collaborate with European institutions, and

(III) the dissemination of suitable, reliable and comprehensive knowledge products to end-users by using the newest information and communication technologies (dynamic and cooperative websites, regional database, etc.).

The BALWOIS information system displays in free access on its web site [www.balwois.net](http://www.balwois.net) more than 1500 references (papers from Balwois conferences, reports, maps, multimedia, websites links, etc.) and many data series on Balkan rivers and lakes stored and managed in a regional Hydrometeorological database. All these documents and data are managed in a MySQL Data Base Management System. (UNIX environment) The language linking the database and the Internet application is PHP.

The BALWOIS Website is a dynamic website :

The Front office is the part of the system which is seen on Internet by the users of the website. Two main menus allow the user to access to the information.

The Back Office is the part of the system that allows the Administrator and the partners who have rights to manage the information on the Website. Web interfaces have been developed and implemented to give the possibility to the "Administrator" and some "Supervisors" to modify HTML pages and to upload

the information stored in the information system from any computer located in any place.

## **EFFECTS OF PIXEL SIZE VARIATION ON ACCURACY OF DIGITAL ELEVATION MODEL (DEM)**

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Digital elevation models (DEM) have wide applications in various fields such as hydrology and natural resources. Some hydrologic, ecologic and geomorphologic models, rely on the DEM as their main input. Slope, aspect, flow direction, flow length and flow accumulation are DEM derivatives whose accuracy are dependent on the DEM. Many factors affect the DEM and its accuracy, pixel size is one of the most important factors.

In this paper, effect of pixel size on DEM accuracy was investigated. First, contour lines on 1:50000 topographic map were digitized. The selected Catchment that covered various topographic conditions, i.e., selected is including mountain, hill and plain. DEM with pixel sizes 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 meter was derived by interpolating contour lines. DEMs was also classified into several classes (e.g. 1100-1200m , 1200-1300m ...) and the And the area of each class was determined by the GIS. On the other hand, the original digitized contour map was polygonized and rasterized in such a way that the area falling within elevation classes (e.g. 1100-1200m, ...) could be computed. The area of elevation classes from DEM (A-DEM) and from the polygonized contour map (A-Poly) were compared for different pixel sizes. The results showed that the difference between A-DEM and A-poly increased catchment average of 3.5% to 17% as the pixel size increased from 10 to 100 meters. The locations causing highest error is mainly around rivers.

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**ABSTRACTS**

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