

# WEB-BASED HYDROLOGIC MODELING SYSTEM FOR TEXAS

Huidae Cho<sup>1,2</sup>

---

AFFILIATION: <sup>1</sup>Department of Civil and Construction Engineering, Kennesaw State University, Marietta, GA 30060;

<sup>2</sup>Dewberry, Atlanta, GA 30341

REFERENCE: *Proceedings of the 2017 Georgia Water Resources Conference*, held April 19-20, 2007, at the University of Georgia

---

The author introduces the Web-based Hydrologic Modeling System (WHydroMod). The primary objective of this research is to create a web-based system that can generate model files for a physically based, distributed watershed model called the Topography Model (TOPMODEL), with a single mouse click in the web browser. The traditional process of hydrologic modeling includes collecting and pre-processing input data, creating model files, running the model, and finally post-processing model outputs. All these tasks for hydrologic simulation require quite a lot of effort and time if manually done, but most of those modeling efforts can be automated by using and integrating the right tools into a well-thought-out modeling system. This new web-based modeling system lets the researcher spend more time on analyzing the modeling results rather than on mechanically manipulating data just to create a hydrologic model. At the same time, since this system is based on an Open Source stack, the inner working of the system is transparent to the user, which makes the system easier to fix and improve when compared to proprietary modeling software. The current version of WHydroMod was developed for Texas as a proof-of-concept implementation and the author plans to implement this system for Georgia soon. Future research includes the integration of parameter optimization in a Bayesian manner and uncertainty estimation of the modeling results with forecasting capabilities.

*Program reference: 4.6.3*