Jun 26th, 9:00 AM - 10:20 AM

Water Level Forecast in Magdalena River. A data driven Model.

Jorge Luis Sanchez-Lozano
Brigham Young University, Corporación Centro de Investigación Científica del Río Magdalena, jsanch3z@byu.edu

Felipe Ardila-Camelo
Corporación Centro de Investigación Científica del Río Magdalena, felipeardilac@gmail.com

Juan David Chacon-Leon
Universidad Nacional de Colombia, Corporación Centro de Investigación Científica del Río Magdalena, jdchaconl@unal.edu.co

Darlly Judith Rojas-Lesmes
Universidad Nacional de Colombia, Corporación Centro de Investigación Científica del Río Magdalena, djrojasl@unal.edu.co

Cesar Antonio Cardona-Almeida
Corporación Universidad de la Costa, Corporación Centro de Investigación Científica del Río Magdalena, ccardona5@cuc.edu.co

See next page for additional authors

Presenter/Author Information

Jorge Luis Sanchez-Lozano, Felipe Ardila-Camelo, Juan David Chacon-Leon, Darlly Judith Rojas-Lesmes, Cesar Antonio Cardona-Almeida, and Cesar Ignacio Garay-Bohorquez

iEMSs International Congress on Environmental Modelling and Software

9th International Congress on Environmental Modelling and Software
Fort Collins, Colorado, USA, Mazdak Arabi, Olaf David, Jack Carlson, Daniel P. Ames (Eds.)
https://scholarsarchive.byu.edu/iemssconference/2018/

Water Level Forecast in Magdalena River. A data driven Model

Jorge Luis Sanchez-Lozano[1], Felipe Ardila-Camelo[2], Juan David Chacon-Leon[3], Darlly Judith Rojas-Lesmes[4], Cesar Antonio Cardona-Almeida[5], Cesar Ignacio Garay-Bohorquez[6]
[1]Brigham Young University, Corporación Centro de Investigación Científica del Río Magdalena (jsanch3z@byu.edu)
[2]Corporación Centro de Investigación Científica del Río Magdalena (felipeardilac@gmail.com)
[3]Universidad Nacional de Colombia, Corporación Centro de Investigación Científica del Río Magdalen (jdchaconl@unal.edu.co)
[4]Universidad Nacional de Colombia, Corporación Centro de Investigación Científica del Río Magdalen (djrojasl@unal.edu.co)
[5]Corporación Universidad de la Costa, Corporación Centro de Investigación Científica del Río Magdalena (ccardona5@cuc.edu.co)
[6]Pontificia Universidad Javeriana, Corporación Centro de Investigación Científica del Río Magdalena (cesar_garay@javeriana.edu.co)

Abstract: The Magdalena River is the most important river in Colombia. It has a length of 1,500km, drains a catchment of 257,000km^2 and is home to 38 million people. Magdalena River is the largest navigable corridor of Colombia and with respect to flood risk, Magdalena River is one of the major sources of damage in Colombia. The Magdalena River Research Center has conducted the Program for Magdalena River Modelling to improve their understanding of the river system. Within this modelling program, because of the uncertainty in cross sections, 2D DEM, as well as the zero level of the gauging stations and rating curves the only confident measurement is the relative water level, and in order to help the decision makers in risk management and river navigation a three-day extended data driven forecast model for water levels in the stations of Puerto Salgar, Puerto Inmarco, Puerto Berrio, Barrancabermeja, Puerto Wilches, San Pablo, Gamarra and El Banco was developed implementing an Adaptive Operator. The forecast can be accessed through an open access web site that can be used by all actors, users and managers of river resources. Three different objective metrics were used to show how the data driven forecast model for the river levels performs accurately and give different acceptance criteria for the expert who has the responsibility to make the decision of approve or not the forecast results.

***Keywords**:* Data driven modelling; Water level forecast; Magdalena River.