

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

NEWS RELEASE

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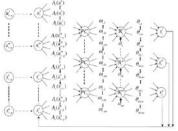
South Florida Water Management District

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High-Tech 'iModel' Aims To Revolutionize Water Management SFWMD Principal Engineer Dr. Alaa Ali developed a computer model that could change the way water is managed for the Everglades



SFWMD's Alaa Ali has developed a cutting-edge modeling tool using a complex rainfall-driven formula (below) to help water managers improve water flow to benefit the Everglades.



West Palm Beach, FL – South Florida Water Management District (SFWMD) Principal Engineer Alaa Ali developed an innovative computer model that will help water managers replicate the movement of water to improve the Everglades and natural systems.

"For the first time, we will be able to manage water in real-time based on how rainfall historically would have moved in the Everglades," said Tommy Strowd, Director of the SFWMD Operations, Maintenance and Construction Division. "This is not a small accomplishment. It is a groundbreaking tool that will change the way we manage water to benefit the Everglades."

The novel concept of the iModel is an "inverse modeling" design. Instead of deciding to move water and then modeling the effect, this model allows the user to enter the desired effect and the model reveals the optimal way to achieve it considering hydrological and operational constraints.

When the iModel is applied to water management systems, it has the capacity to expedite restoration of natural systems, improve reservoir management and help manage the severity of flooding and drought conditions. By simulating water flow in real-time based on how much it is raining, it provides input to water managers on how to move water through a complex network of canals and pumps to reflect the natural flow and water level.

The iModel will be used to help managers make better decisions in designing, implementing and operating major restoration projects. This potentially will result in more efficient operations and could set a precedent that may be duplicated at other agencies for water resource management.

Ali's initial paper describing the iModel was published in the prestigious "Journal of Hydrology" in 2009 and his second paper is anticipated to be published in a peer-reviewed journal later this year. The iModel has now completed the main development phase and is in the implementation stage at the District.

Ali has worked for the SFWMD as an engineer for almost 15 years. He was chosen as the Employee of the Month in July 2011 and was later honored as 2011 Employee of the Year at the March Governing Board meeting. He has a PhD from Utah State University in stochastic modeling/optimization and earned his undergraduate degree from Cairo University.

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About the South Florida Water Management District

The South Florida Water Management District is a regional, governmental agency that oversees the water resources in the southern half of the state – 16 counties from Orlando to the Keys. It is the oldest and largest of the state's five water management districts. The agency mission is to manage and protect water resources of the region by balancing and improving water quality, flood control, natural systems and water supply. A key initiative is cleanup and restoration of the Everglades.