Developing Automatic Controllers for sprinkler irrigation systems

E. Playán (1), R Salvador (2), J Cavero (1), C López (1), S Lecina (2), and N Zapata (1)

(1) Dept. Soil and Water. EEAD-CSIC. Zaragoza. Spain, (2) Dept. Soils and Irrigation. CITA-DGA. Zaragoza. Spain

The application of new technologies to the control and automation of irrigation processes is quickly gaining attention. The automation of irrigation execution (through irrigation controllers) is now widespread. However, the automatic generation and execution of irrigation schedules is receiving growing attention due to the possibilities offered by the telemetry/remote control systems currently being installed in collective pressurized networks. These developments can greatly benefit from the combination of irrigation system and crop models, and from the interaction with agrometeorological databases, hydraulic models of pressurized collective distribution networks, weather forecasts and management databases for water users associations. Prospects for the development of such systems in collective sprinkler irrigation systems are analyzed in this presentation. Additionally, experimental results are presented on the application of these concepts to a hydrant irrigating a solid-set irrigated maize field.