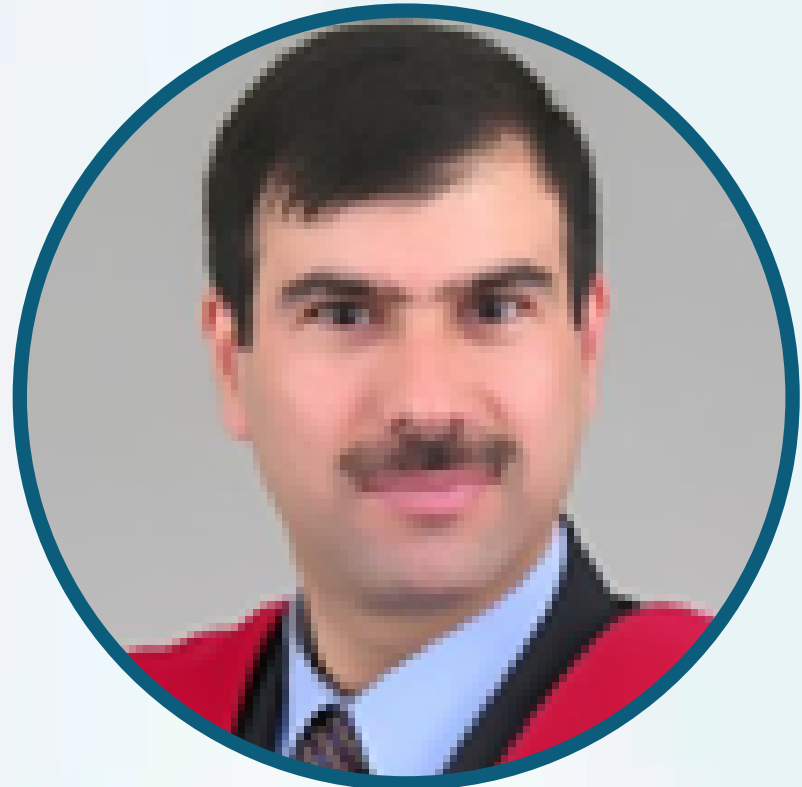


JOINT E-CONFERENCE ON RENEWABLE ENERGY AND SUSTAINABILITY & GEO SCIENCE AND GREEN TECHNOLOGY MARCH 15-16, 2023 | WEBINAR



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Smart irrigation using Satellite data using ALRM for precision irrigation scheduling for different crops

Water scarcity is increasing worldwide especially in Arid and semi-arid areas such Jordan and the different gulf countries such as Saudi Arabia. In these dry regions, most of crops if not all the crops areas under irrigation . In Jordan about 60 % of and 100% of the planted areas in Saudi Arabia are irrigated. The high variability of soil spatially and weather temporally makes the need for smart irrigation valuable for the whole world especially arid regions. There are different methods can be used for smart irrigation such as using soil moisture sensor. The Analytical Land Atmosphere Radiometer Model (ALARM)model calculates the crop water requirements as a residual in the energy budget after computing the sensible heat flux. ALARM model estimates the aerodynamic surface temperature which is needed to calculate the sensible heat flux and does not need hot and cold pixels. In ALARM, fine-scale remotely sensed canopy temperature is used to estimate the actual daily crop water requirements with high accuracy. Many studies on different crop in several countries showed that ALARM gave well reasonable accuracy of 90 for each pixel of 30m. The crop water requirement, soil properties related to irrigation scheduling, irrigation efficiency and leaching requirements are needed for smart irrigation