Geophysical Research Abstracts
Vol. 20, EGU2018-5225, 2018
EGU General Assembly 2018

Contribution of irrigation to the refilling groundwater in the southern Mediterranean - study by simulation using SALTMED model

Mohsana Moukatir, Rachid Fghire, Khaoula Kaskous, and Abderrahmane Lahrouni
LMME, Département de Physique, Faculté des Sciences Semlalia, Université Cadi Ayyad, Marrakech, Morocco

In Morocco, the agriculture sector use more than 80% of available water resource. Based on the available data, the current irrigation systems performance has remained low to very moderate. The percolation and evaporation is the most sources of the water losses at the field area (30 to 40% of loss). In this study, the gravity irrigation was in practice. So, percolation losses are significant. This percolation contributes, in principle, to the recharge of the groundwater. In object to define this contribution, the saltmed model calibrated using the growth and yield of wheat crop data, mainly photosynthetic efficiency and the harvest index. Then, the minimum dose that produces acceptable grain and biomass yields is determined. This led us to make a comparison between the different irrigation techniques taken into account in the model. Simulations have shown that the drip technique is the most economical in both water losses (percolation and evaporation of soil). This work has been closed by estimating the contribution of percolated water in groundwater recharge. The simulations have shown that recharge by gravity irrigation is the largest and is around 255.5 mm/year.