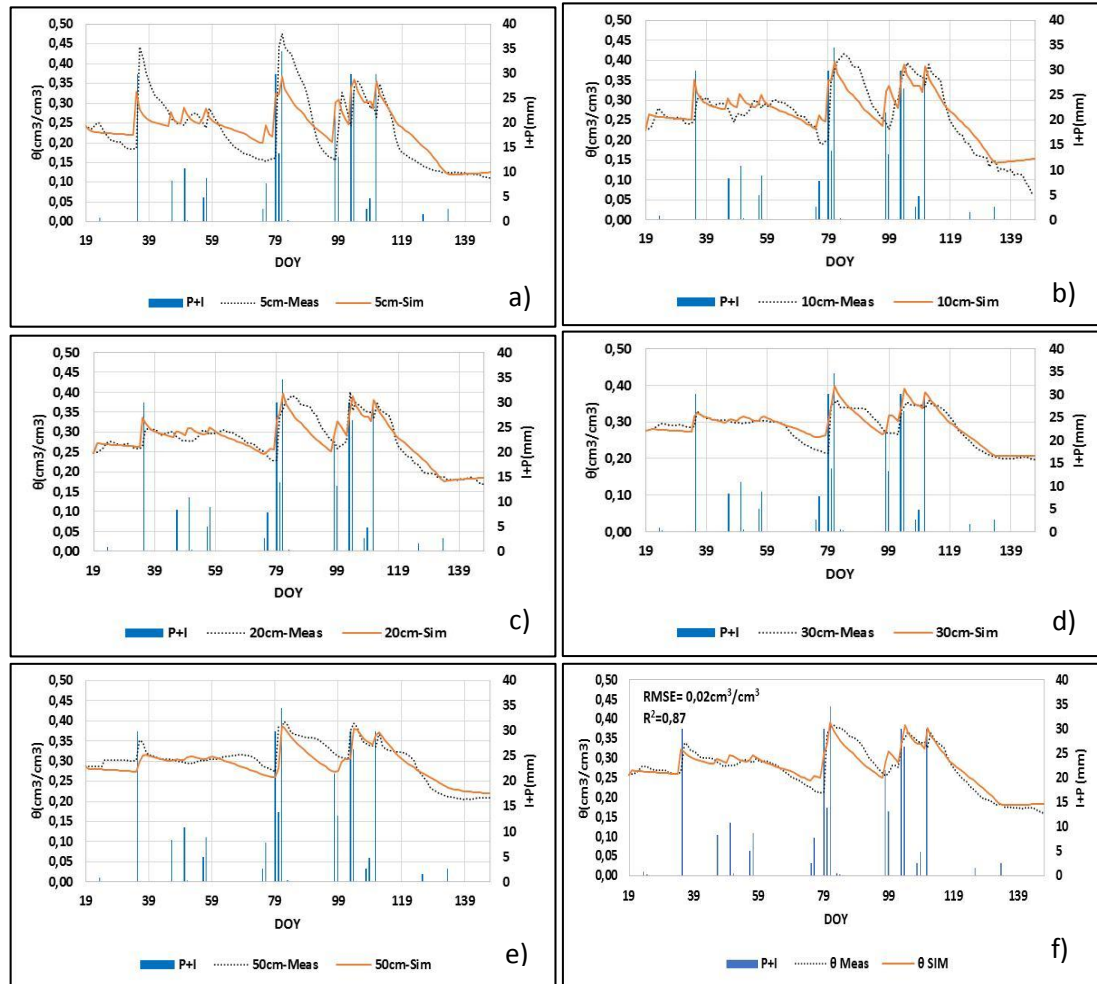
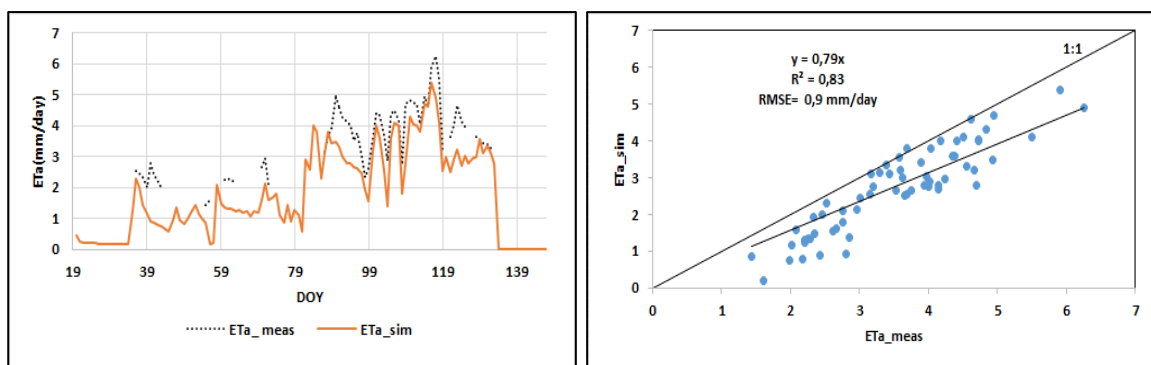


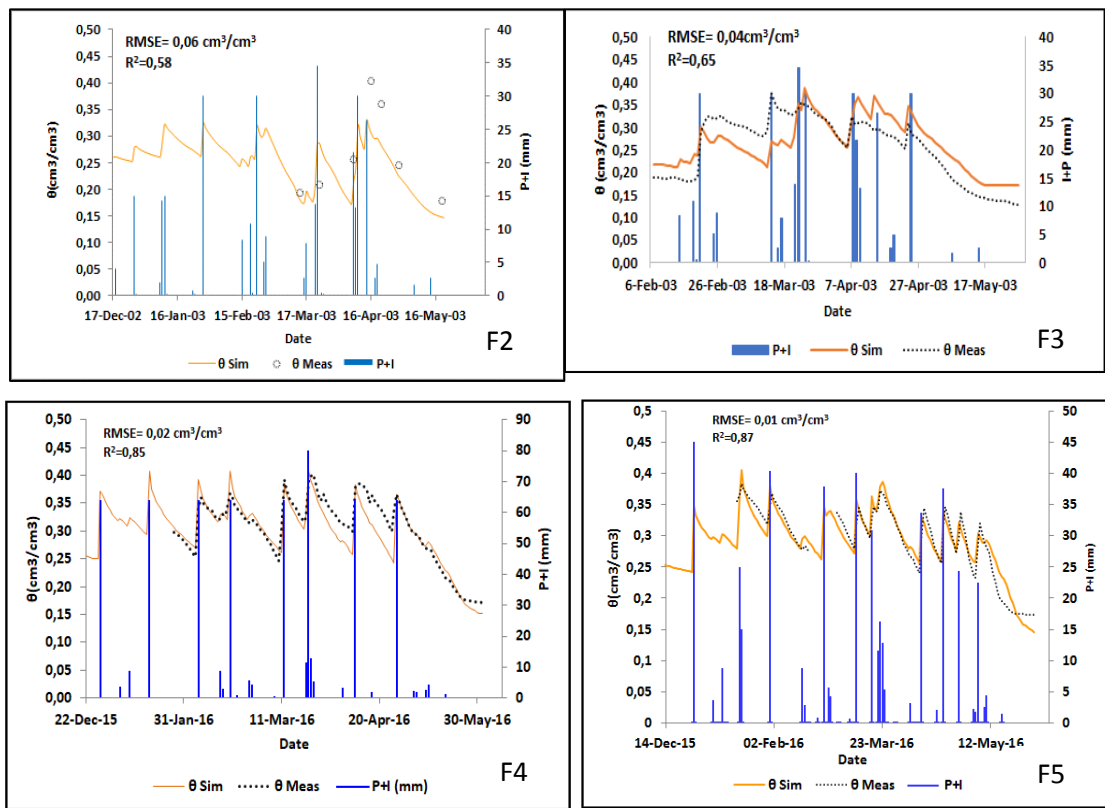
*Figure 1: Study area and location of five experimental wheat fields in the R3 zone (Tensift Al Haouz, Marrakech, Morocco), used for the calibration and the validation of the HYDRUS-1D model.*



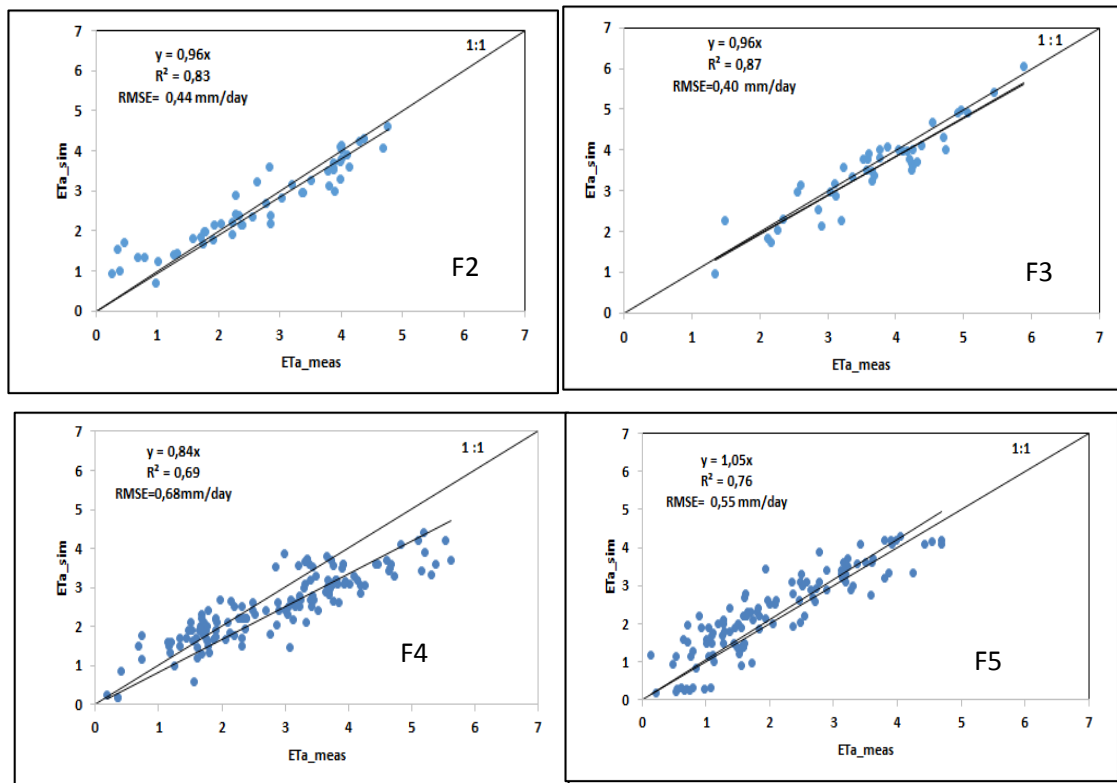
**Figure 2.** Time series of the observed (dashed lines) and simulated (continuous line) volumetric soil water contents ( $\theta$ ) for each layer (fig: a→e) and weighted one (fig f) using HYDRUS-1D model over wheat calibration field (F1) during the 2002/2003 cropping season.



**Figure 3.** Comparison between simulated actual evapotranspiration ( $ETA_{sim}$ ) using HYDRUS-1D model and the measured one ( $ETA_{meas}$ ) by the Eddy covariance system over wheat calibration field (F1) during the 2002/2003 cropping season.



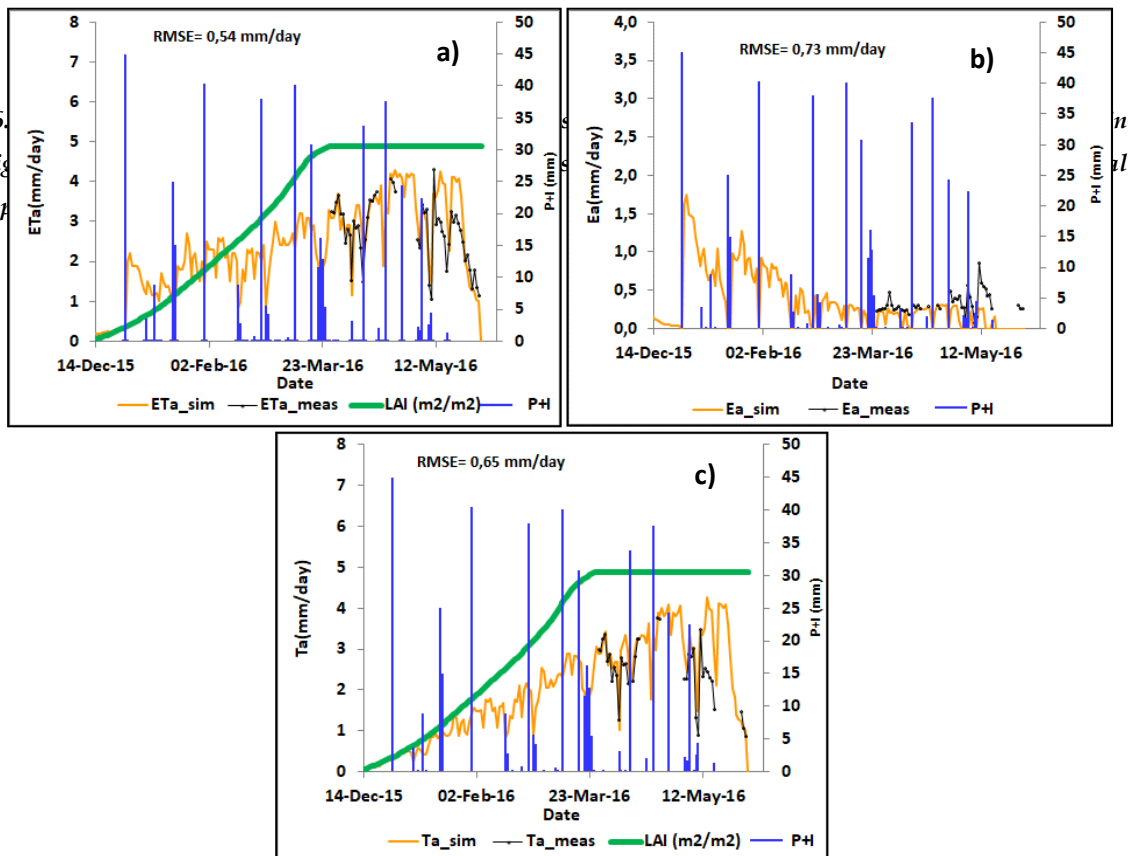
**Figure 4.** Time series of the observed (circle for F2 and dashed lines for F3, F4 and F5) and simulated (continuous line) weighted volumetric soil water contents ( $\theta$ ) using HYDRUS-1D model over four wheat validation fields: F2 and F3 during the 2002/2003, and F4 and F5 during 2015/2016 cropping seasons.



**Figure 5.** Simulated actual evapotranspiration (ETA\_sim) using HYDRUS-1D model versus the measured ETa (ETA\_meas) by Eddy covariance over four wheat validation fields : F2 and F3 during the 2002/2003, and F4 and F5 during 2015/2016 cropping seasons.



Figure 6.  
drip irrig  
soil evap



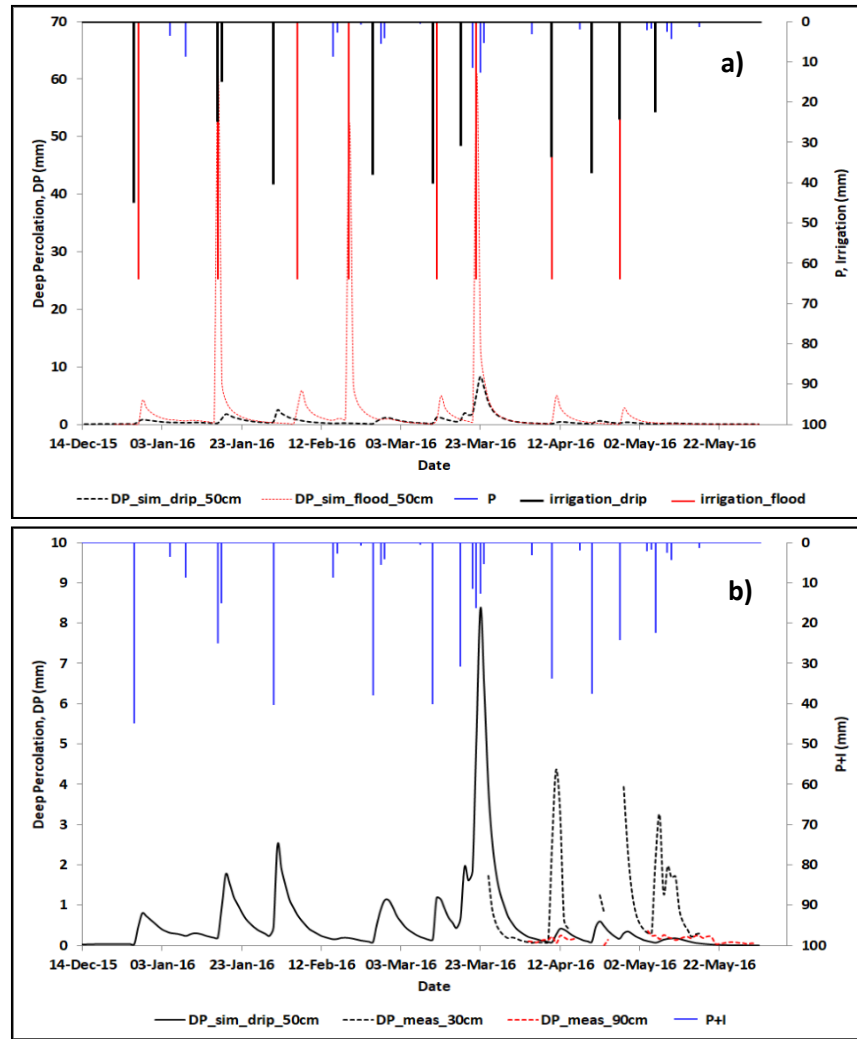


Figure 7. Evaluation of deep percolation (DP) at different depths and under two irrigation systems. a) variation of simulated DP at 50 cm using the HYDRUS-1D over two wheat fields (flood F4 and drip F5), and b) comparison between simulated DP using HYDRUS-1D model and the measured DP by lysimeter at 50 cm and 90 cm over drip irrigated wheat field (F5).



