



{Analysis of Mass and Energy Fluxes in a Mediterranean Area}

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Mass and energy interactions between soil, atmosphere and vegetation, influence all hydrological processes modifying rainfall interception, infiltration, evapotranspiration, surface runoff and groundwater recharge. The present analysis performs a study of fluxes directions and an evaluation of energy balance closure in a typical Mediterranean short vegetation area, using data series obtained from an eddy covariance measurement station, located in the Campania region, Southern Italy. Energy balance closure was evaluated by statistical regression of turbulent energy fluxes, latent and sensible heat against net radiation less the energy stored, and by calculating the energy balance ratio, the ratio between turbulent energy fluxes to available energy. Both methods indicate a general lack of closure in the order of 10%. The analysis was also performed on different seasons of the year with the aim to evaluate the smaller imbalance and to highlight influencing factors and sampling errors on balance closure. In particular, friction velocity turned out to have a great effect on the turbulence development and thus on the balance closure.