# Annual evapotranspiration retrieved solely from satellites' vegetation indices

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We present a simple model to retrieve annual actual evapotranspiration (ETannual) solely from satellites. The model is based on empirical relationships between vegetation indices (NDVI & EVI from MODIS) and ETannual from 16 fluxnet sites. These sites represent a wide range of plant functional types and ETannual. A multiple regression model is applied separately for (a) annuals vegetation systems (i.e. croplands and grasslands), and (b) combined annuals and perennials vegetation systems (i.e. woodlands, forests, savanna and shrublands). It explained 80% of the variance in ETannual for annuals, and 91% for combined annuals and perennials systems. We used this model to retrieve ETannual at 250 m spatial resolution for the Eastern Mediterranean from 2000 to 2013. The models estimates were highly correlated ($R = 0.96$, $N = 7$) with ETannual calculated from water catchments balances along the rainfall gradient of Israel. Models estimates were also comparable to the coarser resolution ET products of MSG (LSA-SAF MSG ETA, 3.1 km) and MODIS (MOD16, 1 km) in 148 Eastern Mediterranean basins, with a correlation coefficient ($R$) of 0.79 ($N = 148$), for both.