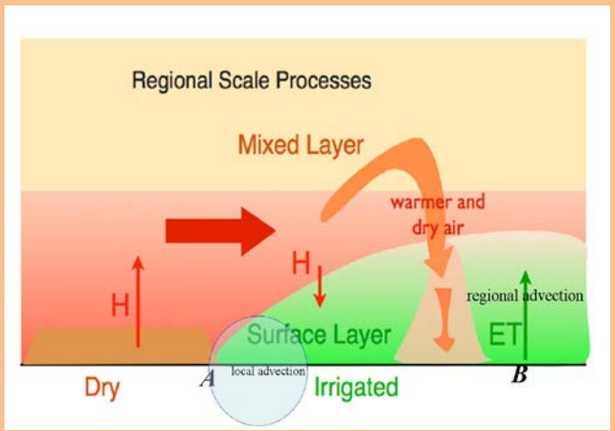
Open Seminar Series
Geoscience & Remote Sensing

Evaporation of well-watered grass estimated from MSG imagery

Henk de Bruin,
(KNMI, Wageningen University Emeritus)

November 26, 2015

12.40 – 13.30
CiTG room F



A thermodynamically based model is presented to estimate daily actual evapotranspiration, *ET*, of a grass site closely resembling reference grass as defined by the Food and Agriculture Organization (FAO) under non-advective conditions, from Meteosat Second Generation (MSG) imagery. Our model is derived from the thermodynamic theory by Schmidt (1915) . Daily net radiation over the grass surface is parameterized as a function of global radiation estimated from MSG. Finally, *ET* is estimated using remotely sensed daily global radiation and air temperature as input only. The method is tested against Cabauw, data.
In addition a similar irrigated grass field is considered , but now surrounded by dry terrain, near Cordoba in the dry season. Now local advection of upwind sensible heat is an extra energy source. It appears that Schmidt's thermodynamics applies for this case as well. Again we are able to estimate *ET* from remotely sensed daily global radiation and air temperature only.
With experimental data gathered in La Crau and in Idaho, the complexity of flows over irrigated grass will be illustrated, showing the need for fundamental research for this type of turbulent flows.