



## **Modeling soil surface energy fluxes from solar radiation, latent heat, and surface plus air temperature measurements**

Edgar Pavia

CICESE, Oceanography, Ensenada, Baja California, Mexico (epavia@cicese.mx)

We determine experimentally the full surface energy fluxes in a tray of wet soil by means of the surface energy balance:  $R = H + L + G$ , where  $R$  is the net radiation to the surface,  $H$  is the sensible heat flux,  $L$  is the latent heat flux, and  $G$  is the heat flux into the surface. We use a meteorological station to measure total solar radiation ( $R_t$ ), and air temperature ( $TA$ ) plus soil surface temperature ( $TS$ ); in addition to a microlysimeter to estimate evaporation ( $L$ ). We make use of the bounds of net solar radiation (that is:  $R_t > R > L$ ), a mean value for the proportionality constant of sensible heat ( $B$ ; that is:  $H = B [TS - TA]$ ), and the residual for the heat flux into the surface (that is:  $G = R - [H + L]$ ). The model is verified for the mean daily value of  $G$  giving acceptable results.