

## Use of field observations and SEBS to retrieve heat fluxes for irrigation areas of Australia

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**Abstract** This study deals with the application of a Surface Energy Balance System (SEBS) algorithm based on Terra/ASTER data and field observations to derive energy balance fluxes (net radiation, soil heat, sensible heat and latent heat) over the Coleambally Irrigation area (CIA), located in the southwest of New South Wales (NSW), Australia. We have selected six ASTER scenes covering the time period of 2002, 2004, 2005, 2006, 2008 and 2009 for estimating the land surface heat fluxes over the study area. To validate the proposed methodology, the ground-measured land surface heat fluxes (net radiation, soil heat, sensible heat flux and latent heat flux) measured from an eddy covariance flux tower were compared with the ASTER derived surface fluxes values for the study area, which are the basis for calculating evapotranspiration using meteorological observations.

**Key words** ASTER; Australia; irrigation areas; land surface heat fluxes; SEBS