



# 1 A relaxed way to estimate boundary layer conductance

A. Jarvis

Lancaster Environment Centre, Lancaster University, UK.

The exploitation of eddy covariance data often relies on the specification of boundary layer conductance. Although there are theories which enable boundary layer conductance to be generated from meteorological and canopy conditions, the inherently non-linear and nonstationary nature of the associated processes make this exercise prone to uncertainty. As a result, it would be useful to be able to use the eddy covariance flux observations themselves when estimating boundary layer conductance in order to derive internally consistent estimates of this parameter. This work details a novel method for doing just this by expressing familiar latent and sensible heat flux equations as *unobserved component models* where the surface to atmosphere temperature difference and flux boundary layer conductance are the unobserved components. A scheme is then developed where these two models are used iteratively to relax to a solution for the two unobserved components. The method is evaluated using both synthetic and real eddy covariance data.