

# Impacts of seasonality and surface heterogeneity on water-use efficiency in mesic grasslands

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Net ecosystem exchange, water flux (LE), and sensible heat (H) measurements were conducted with a Campbell Scientific CSAT3 3D Sonic Anemometer and a LICOR 7500 open-path gas analyser. Both flux instruments were located on the tower 3.0 m above the surface. The sonic





KFS and K4B sites tend to be within the same proximity; however, KFS displays more negative values. This is especially pronounced when examining mean seasonal and annual values at KFS, which has lower values compared with KON and K4B (Table I).

Across all sites, there is an increase in (less negative values) when examining mean annual values (Figure 3, Table I) from 2007 to 2008. Mean annual values indicate an increase in

## DISCUSSION

### Impact of vegetation composition

While leaf-level water-use efficiency (WUE) is greater in  $C_4$  versus  $C_3$  plant species (Ehleringer and Monson, 1993),









