

Prescribed conditions

Input data in **fully stressed** conditions:
 $\beta_s = \beta_v = 0$

Input data in **potential** conditions:
 $\beta_s = \beta_v = 1$

Unknowns:
 T_s, T_v, T_{surf}

SPARSE model

SPARSE model

Energy balance components in **fully stressed** conditions

Soil evaporation & transpiration in **potential** conditions

$T_{surfstress}, H_{sstress}$
& $H_{vstress}$

$T_{surfspot}, LE_{spot}$ &
 LE_{vpot}

Retrieval conditions

Input data = **observed surface temperature**

Unknowns:
 T_s, T_v, LE_s

SPARSE model

SPARSE model

SPARSE model

yes

$LE_s = 0$

no

Unknowns:
 T_s, T_v, LE_v

yes

$LE_v = 0$
 $LE_s = 0$

no

Unknowns:
 T_s, T_v, T_{surf}

$LE_v >$
 LE_{vpot}
or $LE_s >$
 LE_{spot}

yes

$LE_v = LE_{vpot}$
 $LE_s = LE_{spot}$

no

$\beta_s, LE_s, \beta_v, LE_v$
in **actual** conditions