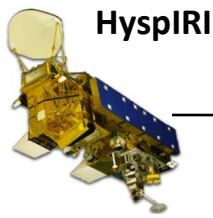


Radiance-based LST Validation

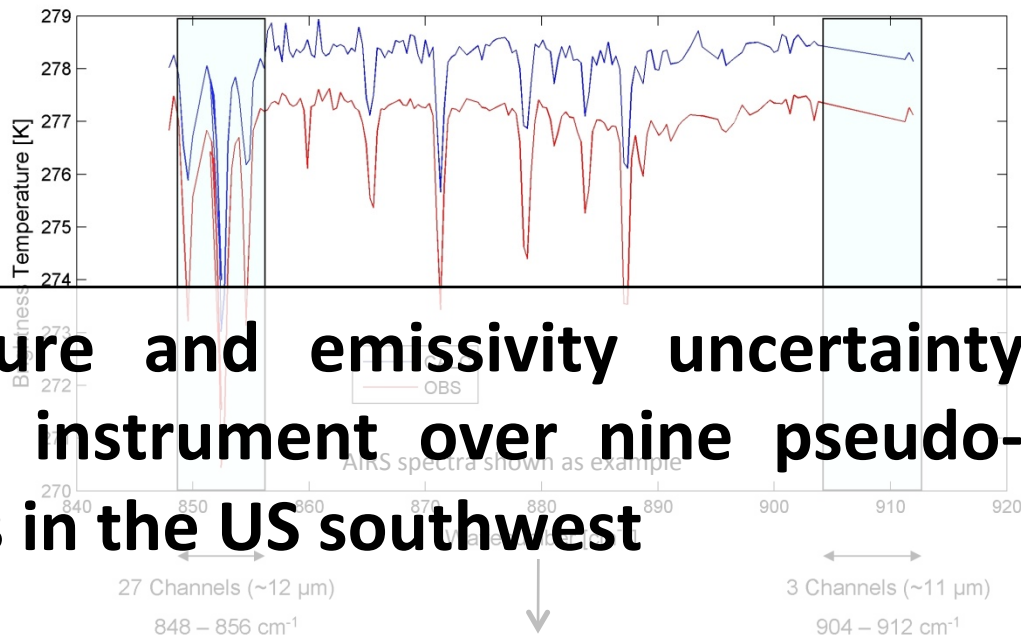


HyspIRI

$T_b(\text{obs})$
CCR's

WV Absorption

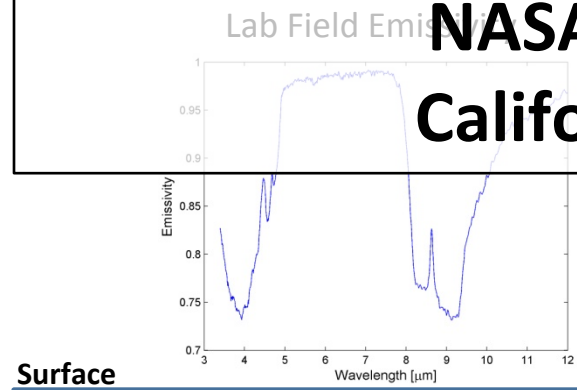
Clear



Land surface temperature and emissivity uncertainty analysis of the HyspIRI instrument over nine pseudo-invariant sand dune sites in the US southwest

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Surface
 $T_s(\text{HyspIRI retrieved})$

$$T_{s'} = T_s \pm 2K$$

MODTRAN

$T_b(\text{calc})$

$$T_{\text{rad}} = \text{interp}([T_s, T_{s'}], [T_b, T_b], T_b)$$

Theoretically Correct Surface Temperature

YES | NO → QUIT!

$$\Delta T_b(\text{OBS}) = T_{b11}(\text{obs}) - T_{b12}(\text{obs})$$

$$\Delta T_b(\text{calc}) = T_{b11}(\text{calc}) - T_{b12}(\text{calc})$$

$$\Delta T_s = \Delta T_b(\text{obs}) - \Delta T_b(\text{calc})$$

0.5 K, $\Delta T = 0.5 K$