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Outstanding Student Poster & PICO Contest

Near Estimating daily 1-km surface air temperature from satellite all-weather land surface temperature over the Tibetan Plateau

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Study area and data

◆ Study area

The study area is the Tibetan Pleateau. Its elevation varies from 60 m to over 8000 m, and the average elevation is much higher than the other areas at the same latitude. The digital elevation model (DEM) of the Tibetan Plateau is shown in Fig. 1.

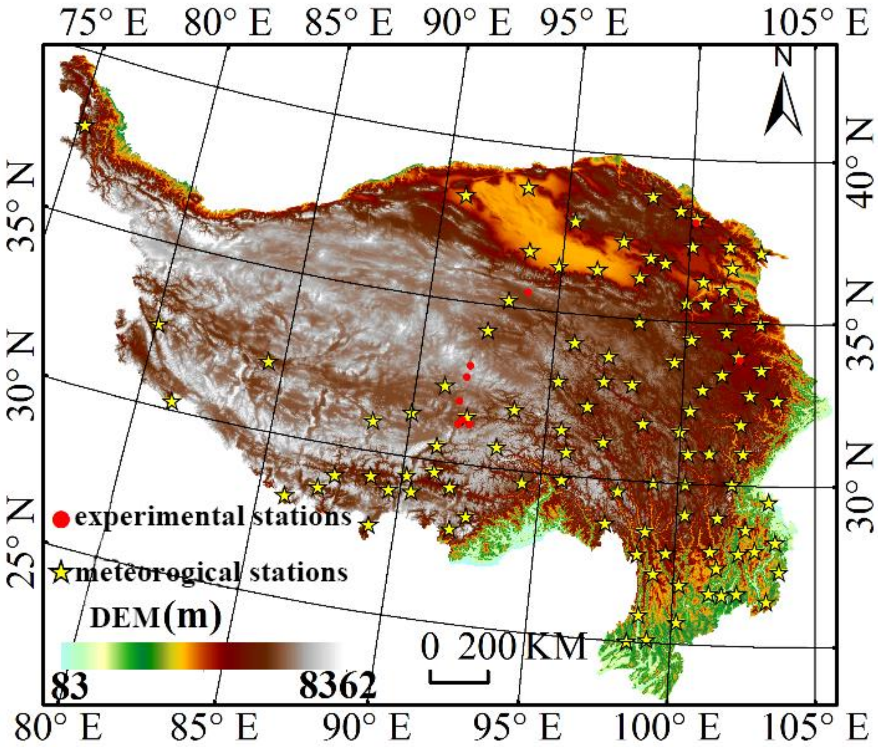


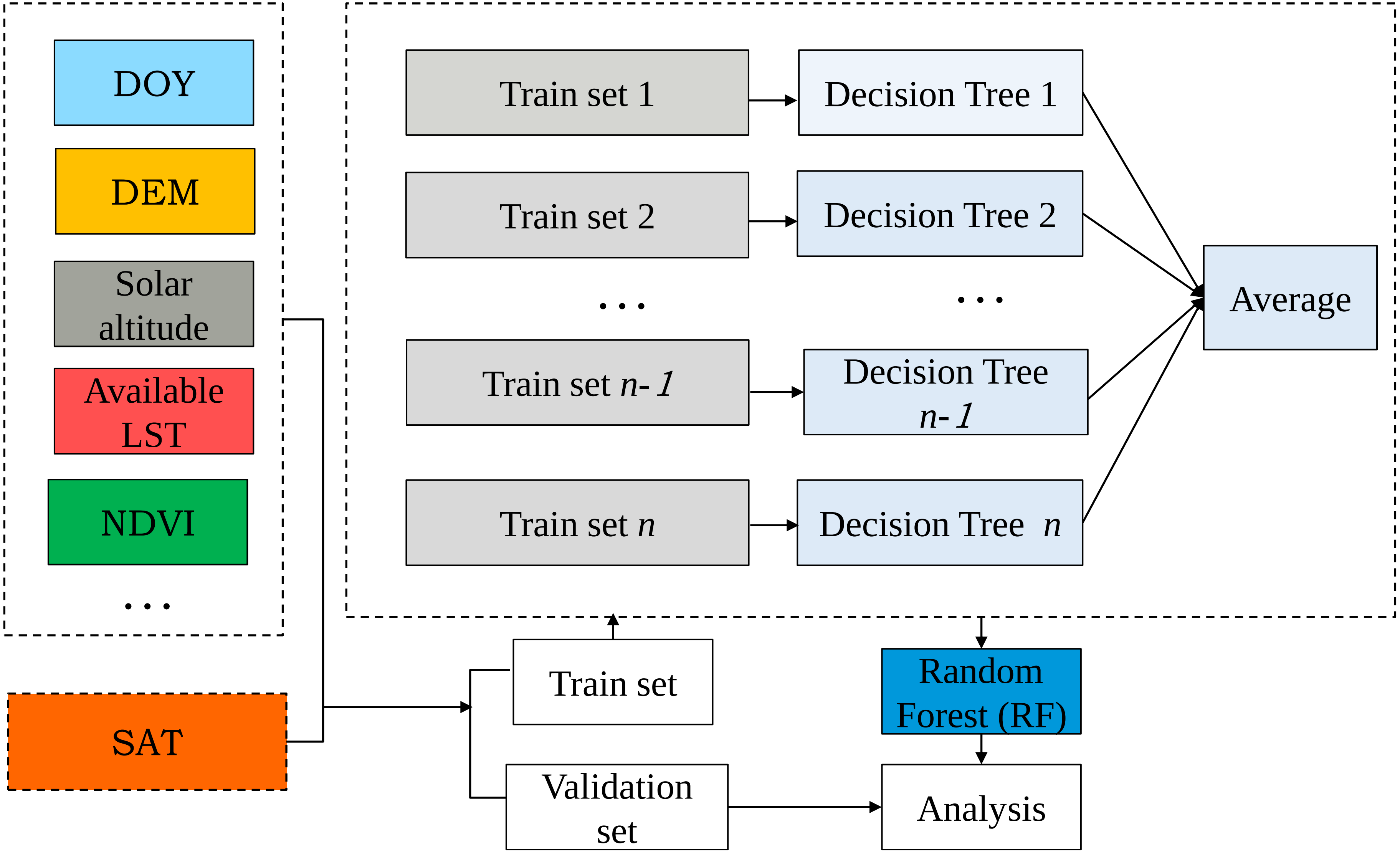
Fig. 1. Digital elevation model (DEM) of the Tibetan Plateau. The meteorological and experimental stations providing the measured Ta are also shown

Study area and data

Data

Data	Source
Daily mean surface air temperature(SAT)	http://www.nmic.cn/
Zhang_LST	http://47.94.44.92:81/
MYD/MOD11	https://search.earthdata.nasa.gov/
Digital elevation model (DEM)	http://srtm.csi.cgiar.org/
Normalized Difference Vegetation Index (NDVI)	https://search.earthdata.nasa.gov/

Methodology



Result

Evaluation of RF model performance

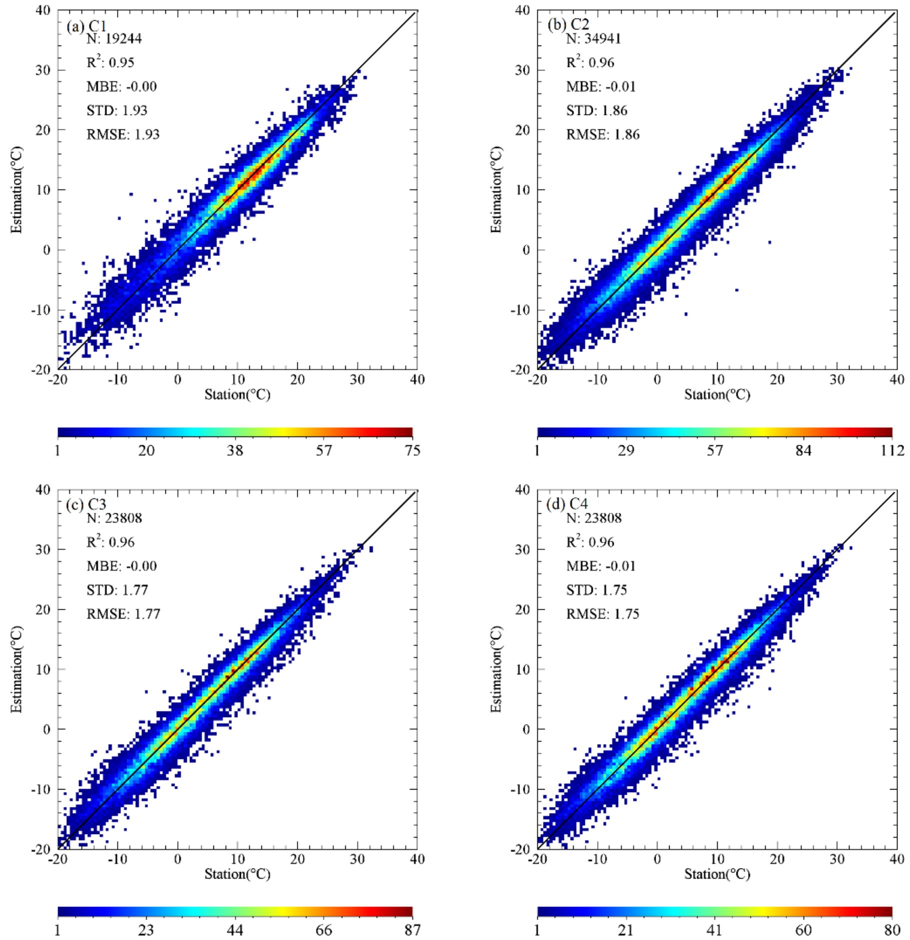
Different Combinations of LST Terms are listed below.

Combinations	Zhang_LST Day	Zhang_LST Night	MOD11 Day	MOD11 Night
1	yes	yes	-	-
2	yes	yes	yes	-
3	yes	yes	-	yes
4	yes	yes	yes	yes

Result

◆ Evaluation of RF model performance

RF model performance of different combinations of LST Terms 1-4 (C1-C4)



Result

- **The spatial and temporal patterns of the RF model estimated SAT**