

Validation of SMOS soil moisture products over Maqu and Twente



SMOS L2 soil moisture products have been validated over two sites: Twente (The Netherlands) and Maqu (China). In situ measurements at 5 cm depth are provided by soil moisture monitoring networks, each consisting of 20 stations and covering an area of about 40 km x 70 km. Twente and Maqu are located in different climatic zones and are characterised by different topography, soil texture and land cover. In Twente the climate is temperate with precipitation spread over the year. The area is flat and comprises a mosaic of agricultural fields with settlements and forest patches. Maqu site is located along the upstream reach of the Yellow River at an elevation of about 3000-3500 m, where the hills are covered by homogeneous grassland and the river valley by wetland. Cold winter and precipitation in the monsoon seasons characterise the climate in Maqu. Few SMOS L2 soil moisture products are available over the Maqu region. Moreover, some areas are masked out by flags (topography and forest), that limit

its the soil moisture retrieval. However, there is an acceptable agreement between the in situ and the SMOS soil moisture data. The general pattern of soil moisture over Twente is well estimated by SMOS. However SMOS estimates are noisy and in average lower than the measured values.

Maqu Site

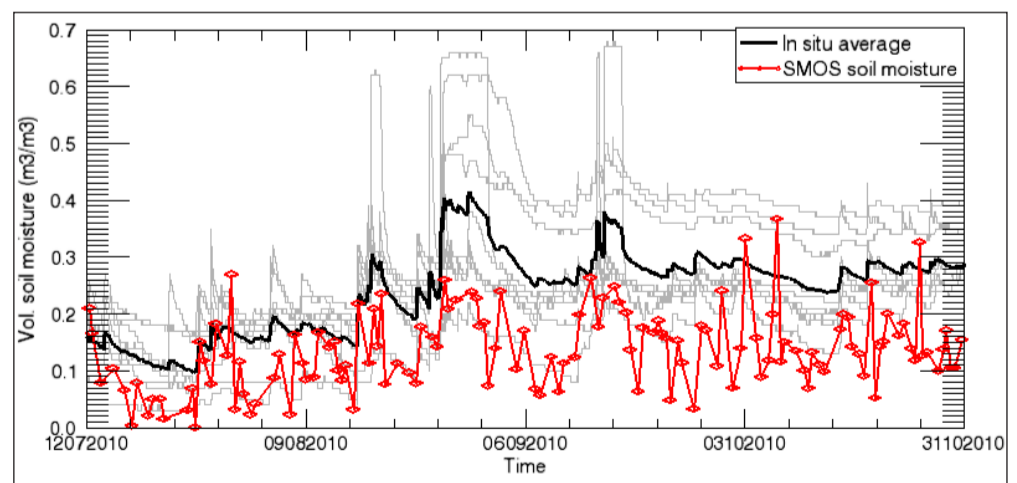
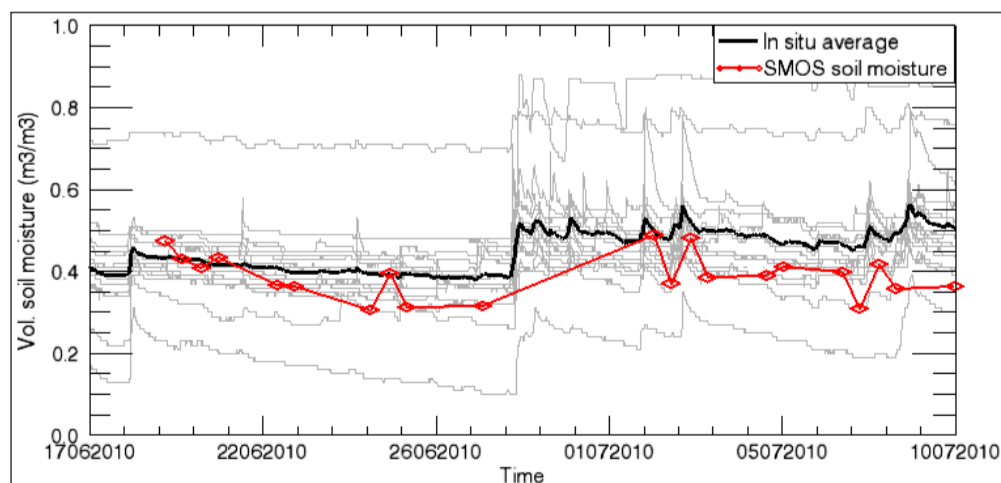
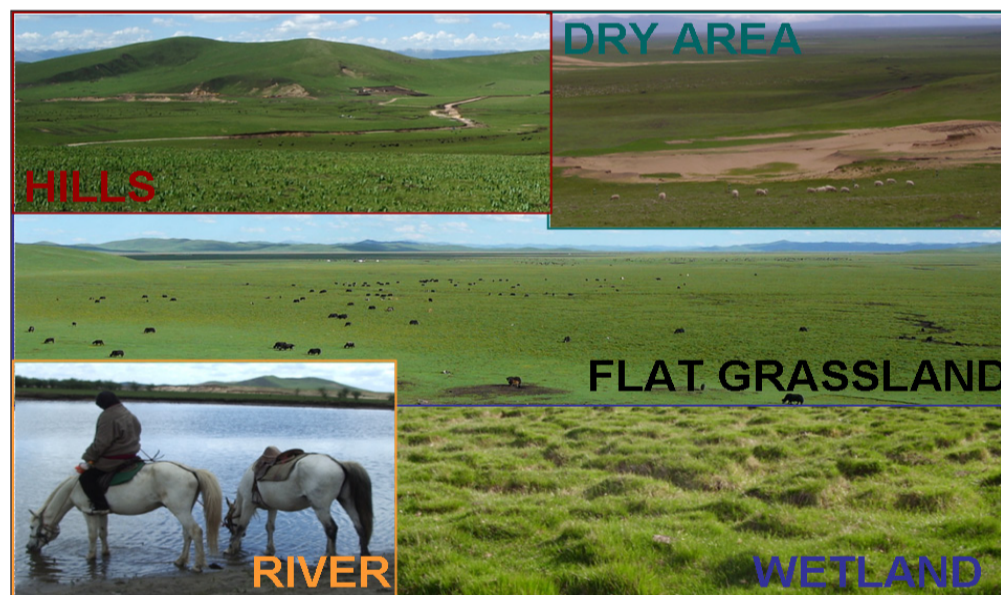
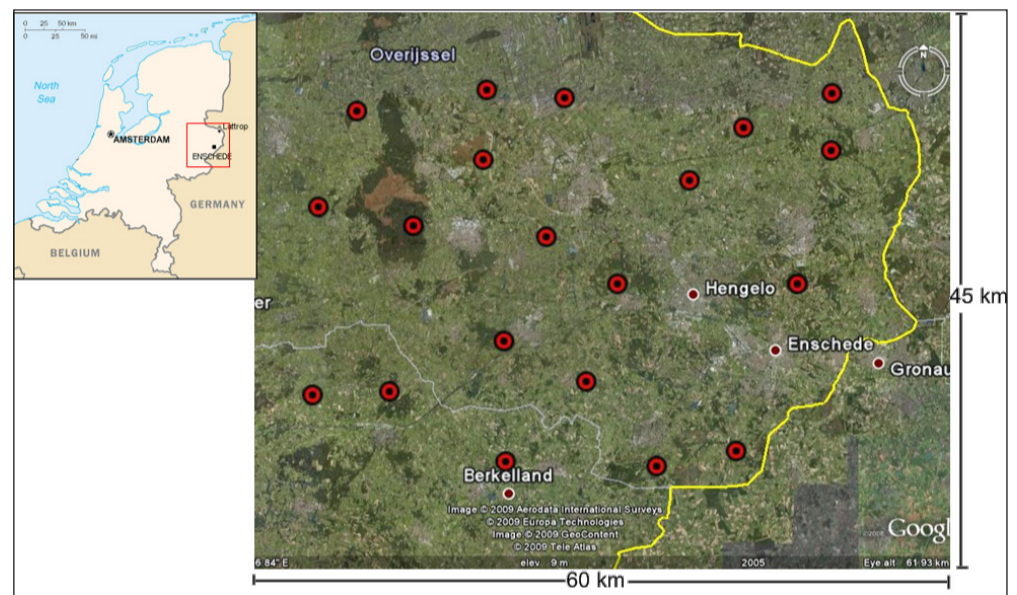
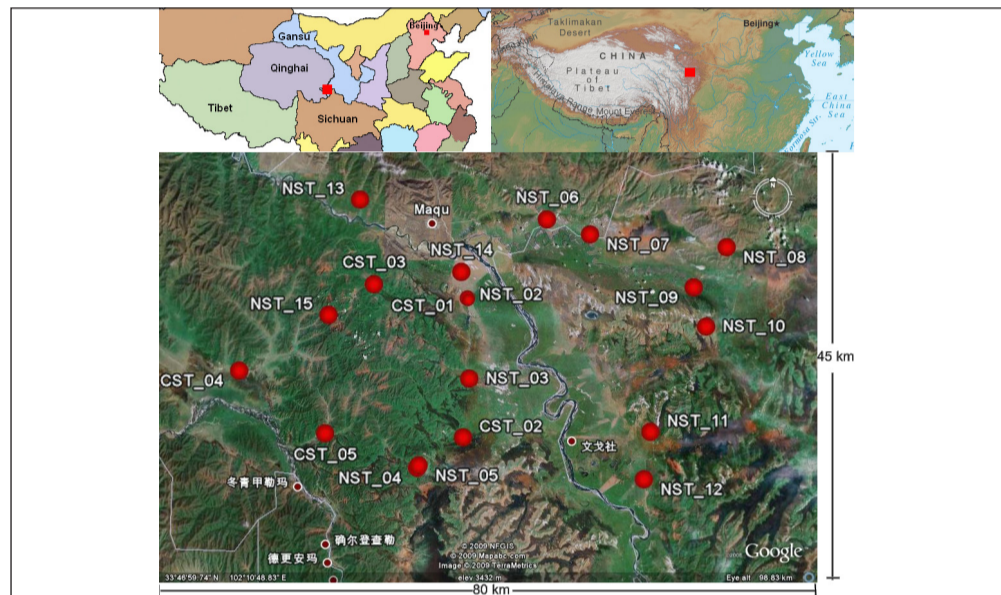
Location: South of Maqu city (Gansu province, China)
Coordinates: 33°30' – 34°15'N, 101°38' – 102°45'E
Elevation: 3430 – 3750 m
Climate (Koeppen Clas. Syst.): Cold (Dw, winter dry season)

Acknowledgment

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Twente Site

Location: Twente region, The Netherlands
Coordinates: 52°05' – 52°27'N, 6°05' – 7°00'E
Elevation: -3 – 50 m
Climate (Koeppen Clas. Syst.): Temperate (Cf)



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