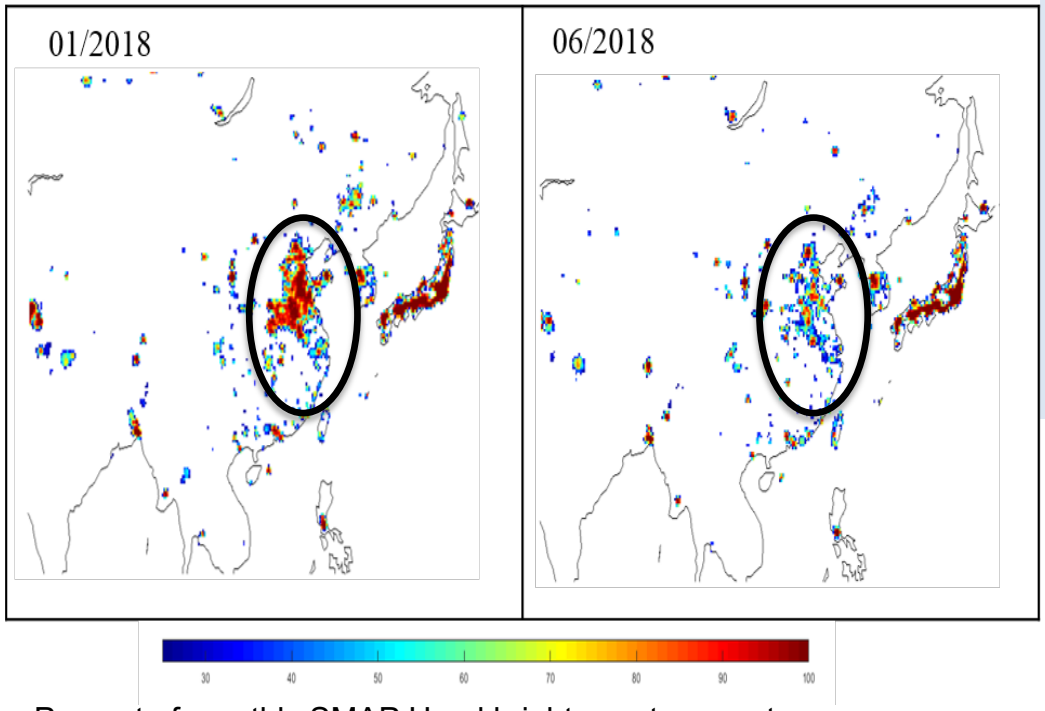
SMAP Reveals Seasonal Cycle of Radio Frequency Interference in China



Percent of monthly SMAP H-pol brightness temperature measurements containing significant RFI contributions in Asia, compared between January and June 2018. Significant seasonal changes have repeated over multiple years of observations.

Problem: SMAP's L-band radiometer includes an RFI processor to estimate and reduce the corrupting influence of man made radio frequency interference. RFI contributions over Asia have been significant, and SMAP's longer time series now allows tracking changes in the RFI environment in time.

Finding: Consistent seasonal variation in RFI amplitude and extent has been observed in China over multiple years. Knowledge of this behavior important for understanding RFI environment. Source of behavior still under investigation.

Impact: Changes in the RFI environment can impact SMAP's sensing performance. SMAP's RFI team is maintaining vigilance in reporting offending sources and in optimizing SMAP's RFI removal algorithms using these insights.

Bringer, A., Daehn, M., Johnson, J.T., Soldo, Y., Le Vine, D.M., de Matthaeis, P., Piepmeier, J.R. and Mohammed, P., 2018: SMAP Mission: Changes in the RFI environment, IGARSS.