Assessment of the seasonal uncertainty of microwave L-band satellite soil moisture products in Jiangsu Province, China

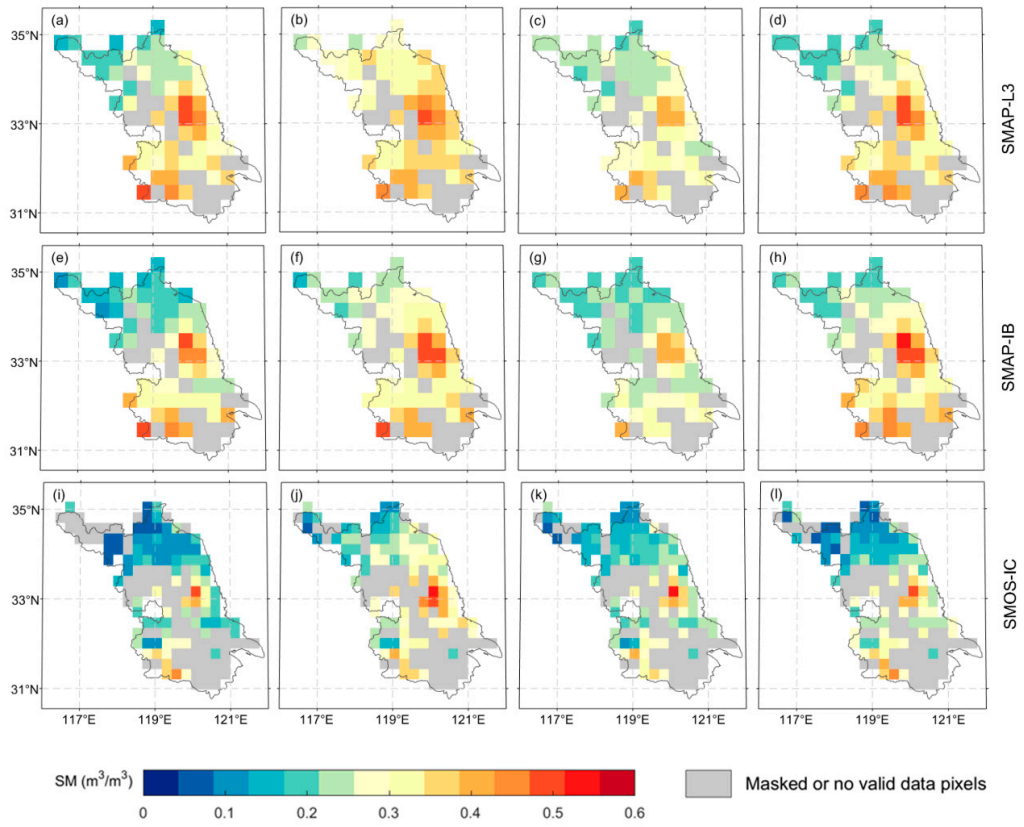


Figure S1. Averaged nighttime SM (m^3/m^3) values from 2016 to 2022 for the three L-band SM products. Grey values indicate "Masked or no valid data pixels".

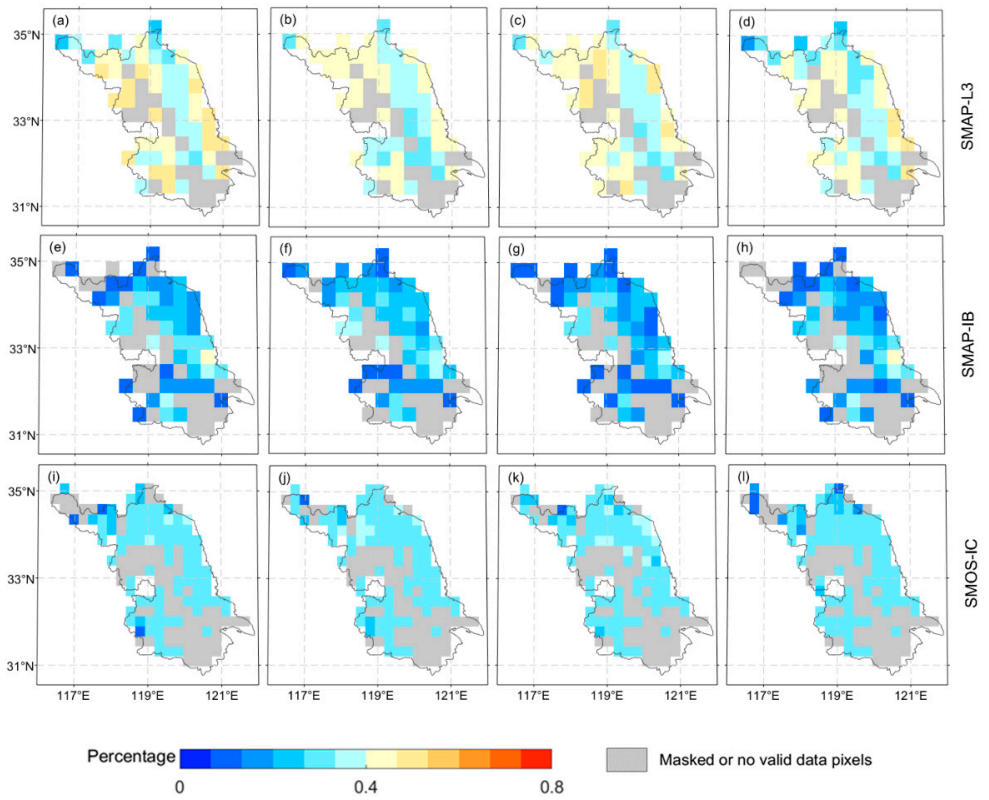


Figure S2. Percentage of data availability for three SM products from nighttime observations between 2016 and 2022. Grey values indicate "Masked or no valid data pixels".

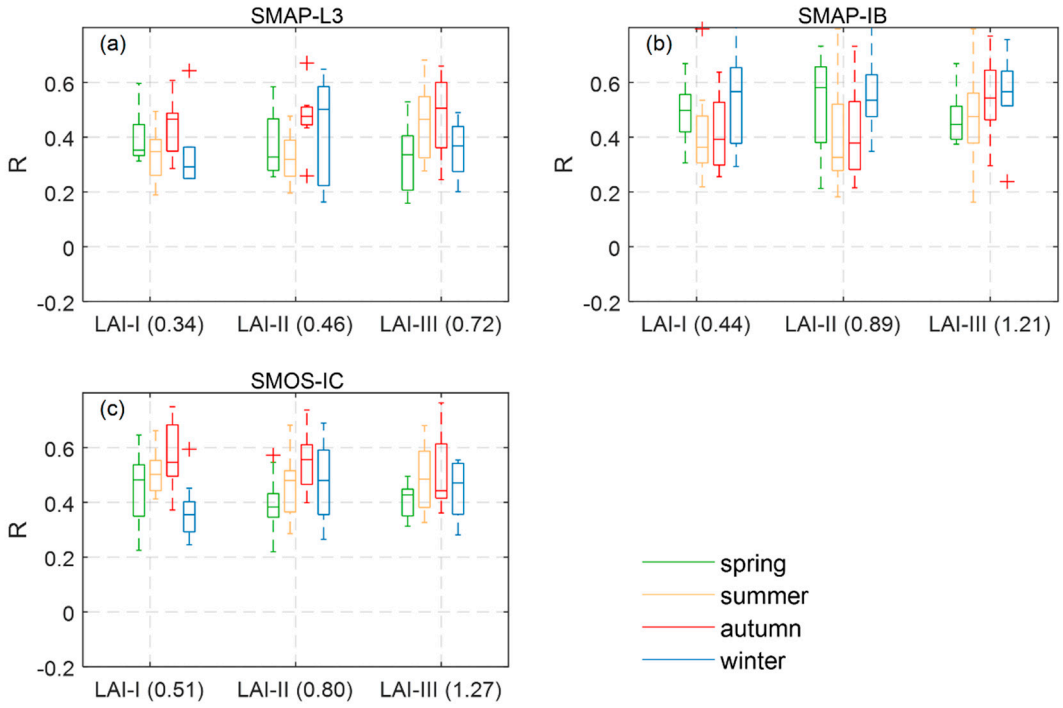


Figure S3. Boxplot of R metric statistical comparisons between the three L-band SM products and *in-situ* measurements by different LAI levels during nighttime across the four seasons. The values in parentheses are the medians of LAI.

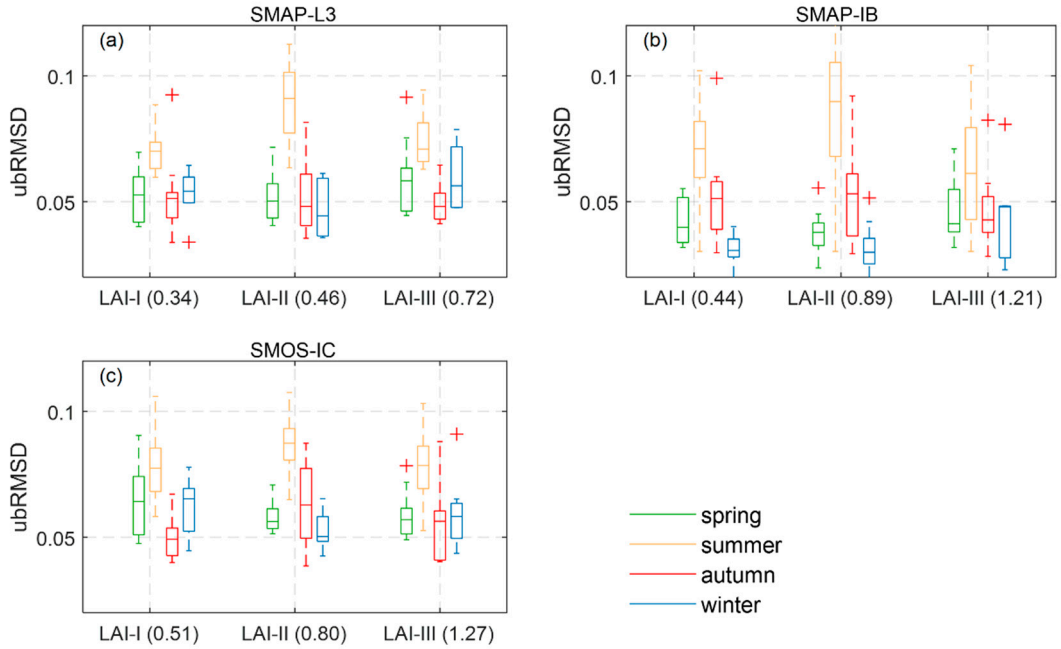


Figure S4. Boxplot of *ub*RMSD metric statistical comparisons between the three L-band SM products and *in-situ* measurements by different LAI levels during nighttime across the four seasons. The values in parentheses are the medians of LAI.

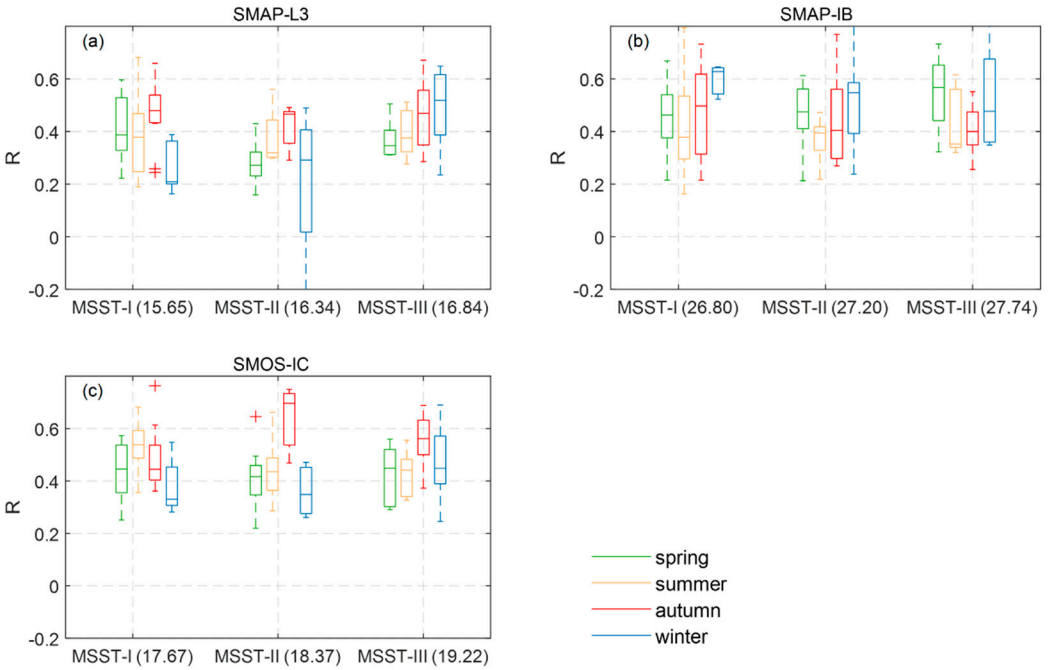


Figure S5. Boxplot of R metric statistical comparisons between the three L-band SM products and *in-situ* measurements by different MSST levels during nighttime across the four seasons. The values in parentheses are the medians of MSST.

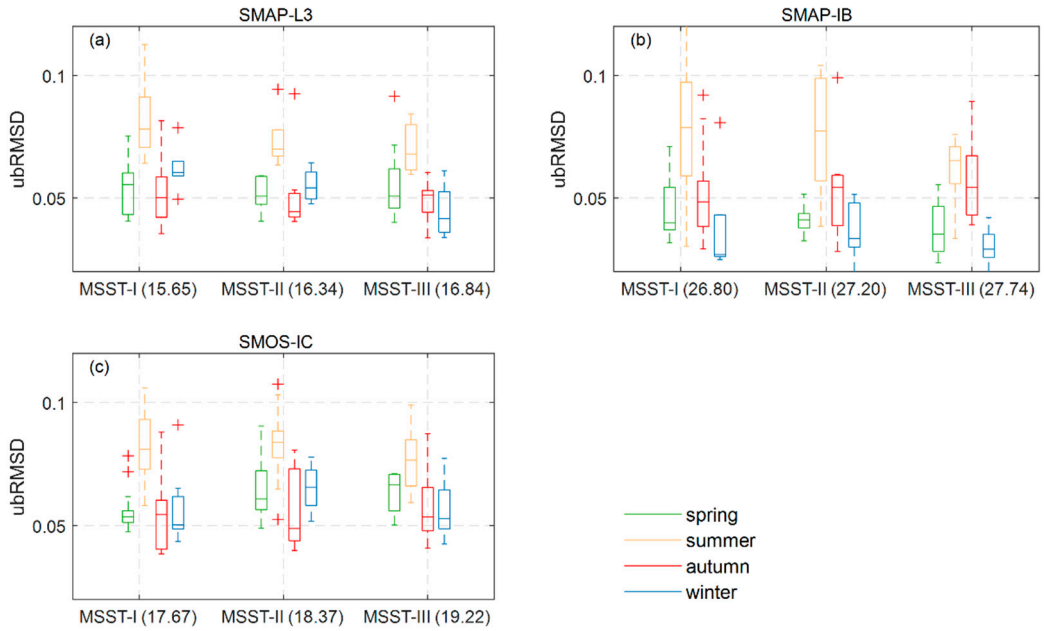


Figure S6. Boxplot of *ub*RMSD metric statistical comparisons between the three L-band SM products and *in-situ* measurements by different MSST levels during nighttime across the four seasons. The values in parentheses are the medians of MSST.

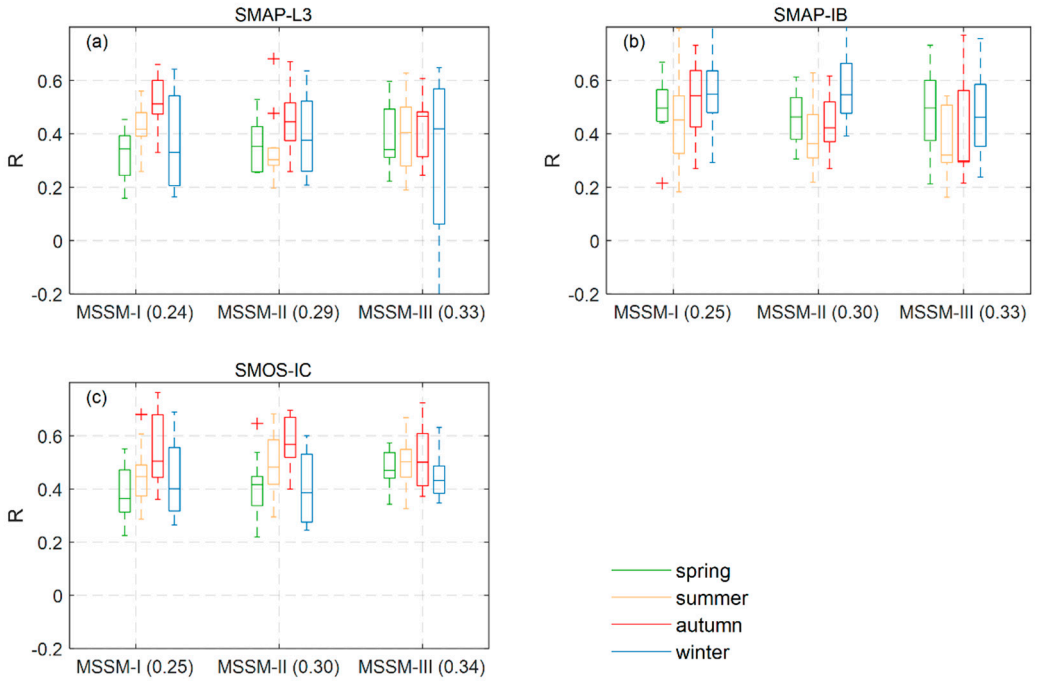


Figure S7. Boxplot of R metric statistical comparisons between the three L-band SM products and *in-situ* measurements by different MSSM levels during nighttime across the four seasons. The values in parentheses are the medians of MSSM.

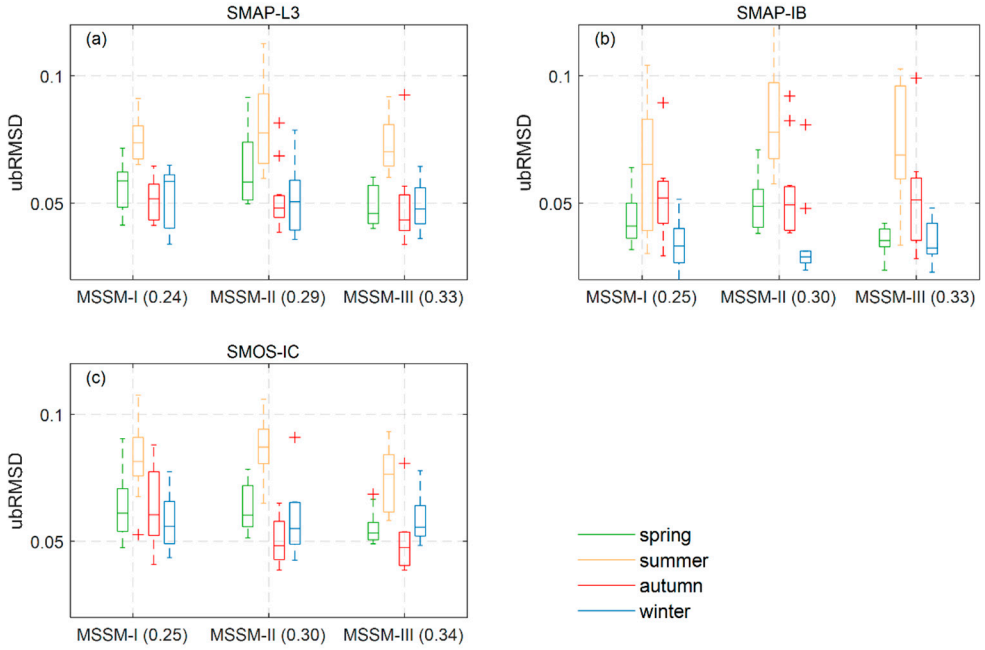


Figure S8. Boxplot of *ub*RMSD metric statistical comparisons between the three L-band SM products and *in-situ* measurements by different MSSM levels during nighttime across the four seasons. The values in parentheses are the medians of MSSM.

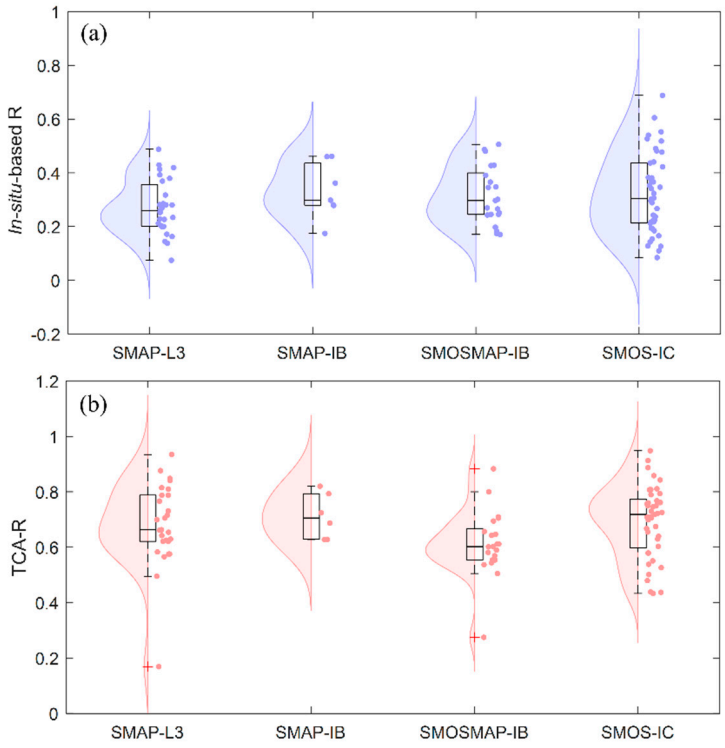


Figure S9. R metrics for the four SM products, including both TCA and *in-situ*-based assessments during daytime.