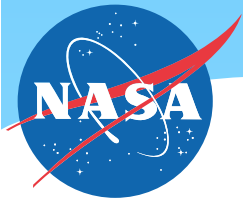


Amazon River Discharge and Its Relationship with Precipitation from TRMM (TMPA) measurements

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Ocean Salinity Science Team and Salinity Continuity Processing meeting
Aug. 27-29 2018, Santa Rosa, California



National Aeronautics and
Space Administration

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California



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Outline

- Amazon River Discharge and Precipitation Comparisons
- RSS SMAP L3 v2 8-Day Running Mean 40km and 70km Comparisons
- Datasets Used
 - RSS SMAP L3 v2 8-Day Running Mean 40km
 - RSS SMAP L3 v2 8-Day Running Mean 70km
 - TRMM L3 Daily Dataset

Outline

- **SMAP** - Soil Moisture Active Passive
- **TRMM** - Tropical Rainfall Measuring Mission
- **TMPA** - TRMM Multi-satellite Precipitation Analysis

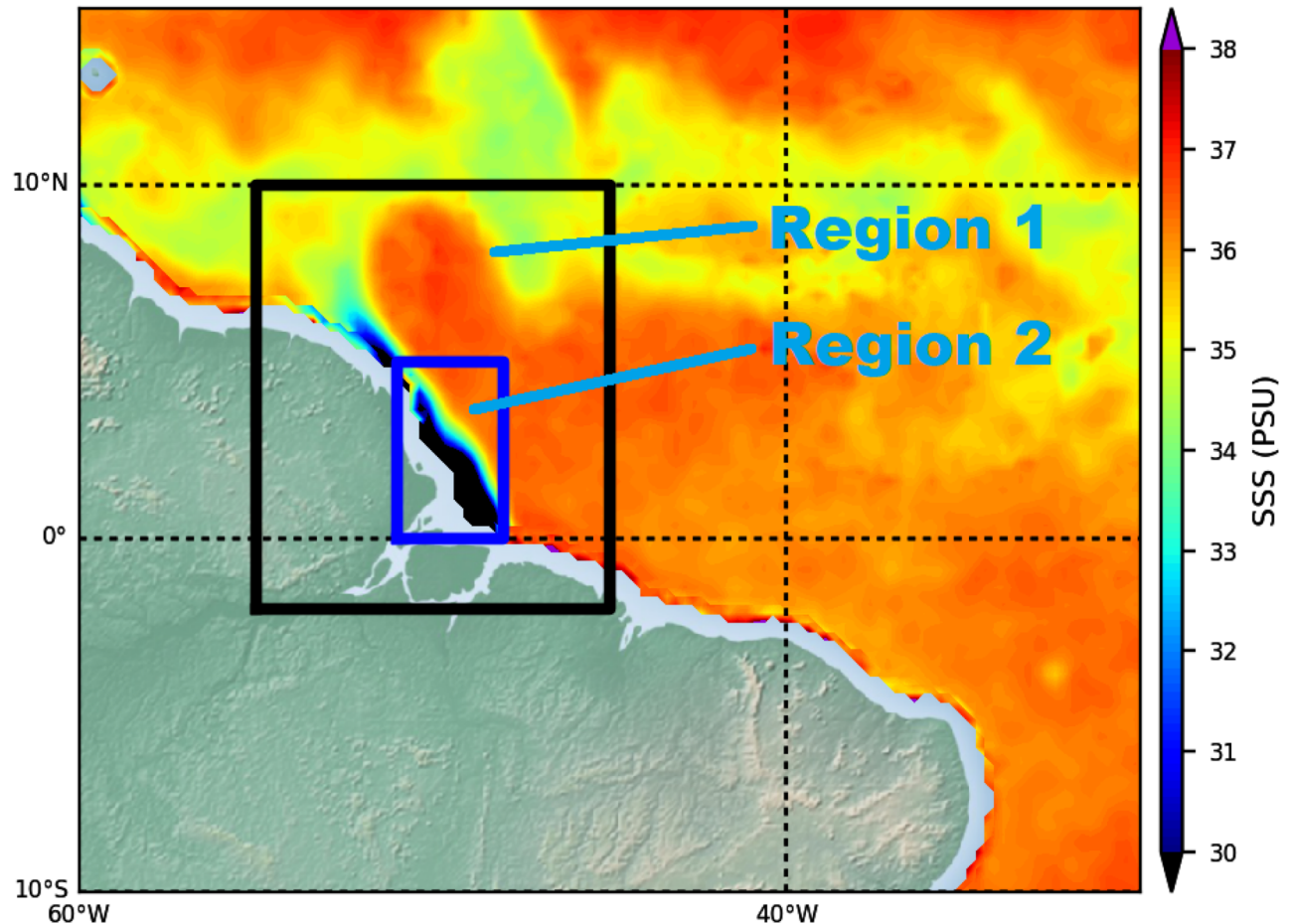
Atlantic Equatorial Regions

2017-10-27 (RSS SMAP 70km 8Day)

**Atlantic regions
we concentrate
on for the SSS
calculation**

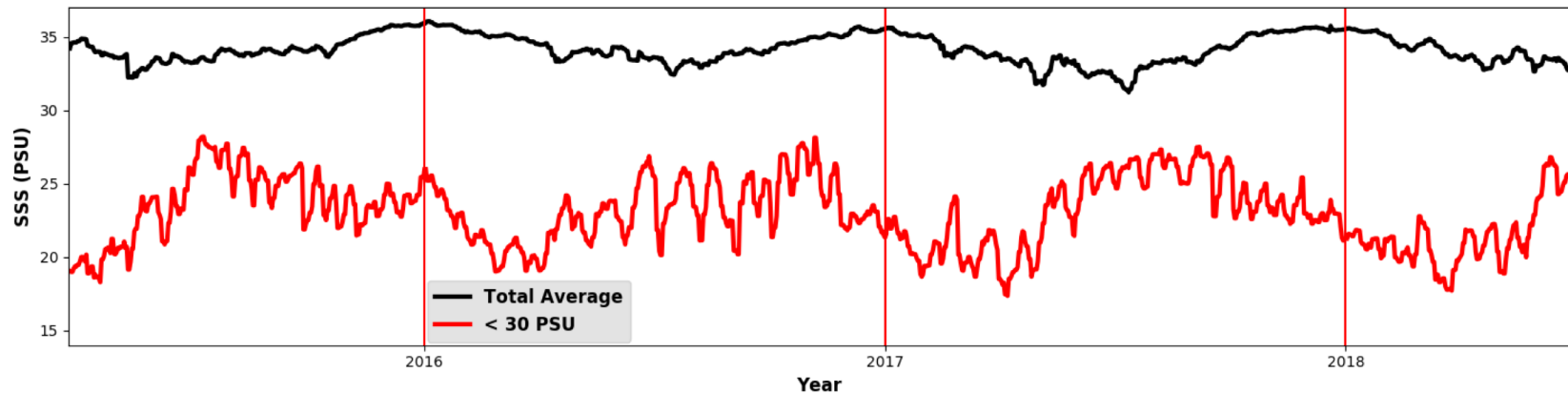
**Region 1:
Lat (-2, 10)
Lon (-55, -45)
~1920 Pixels**

**Region 2:
Lat (0, 5)
Lon (-51, -48)
~240 Pixels**

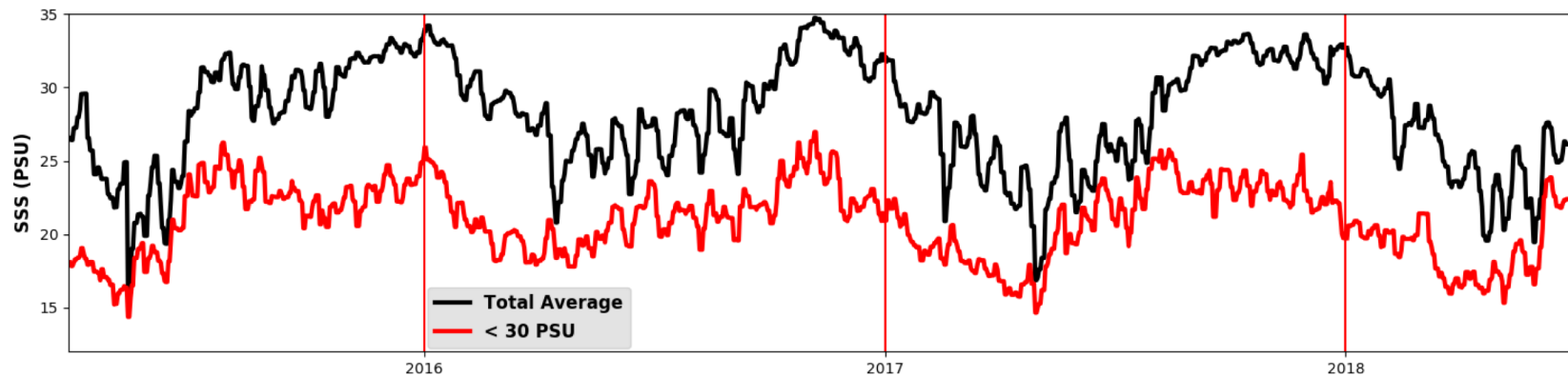


RSS SMAP 70 km SSS Averages

Region 1

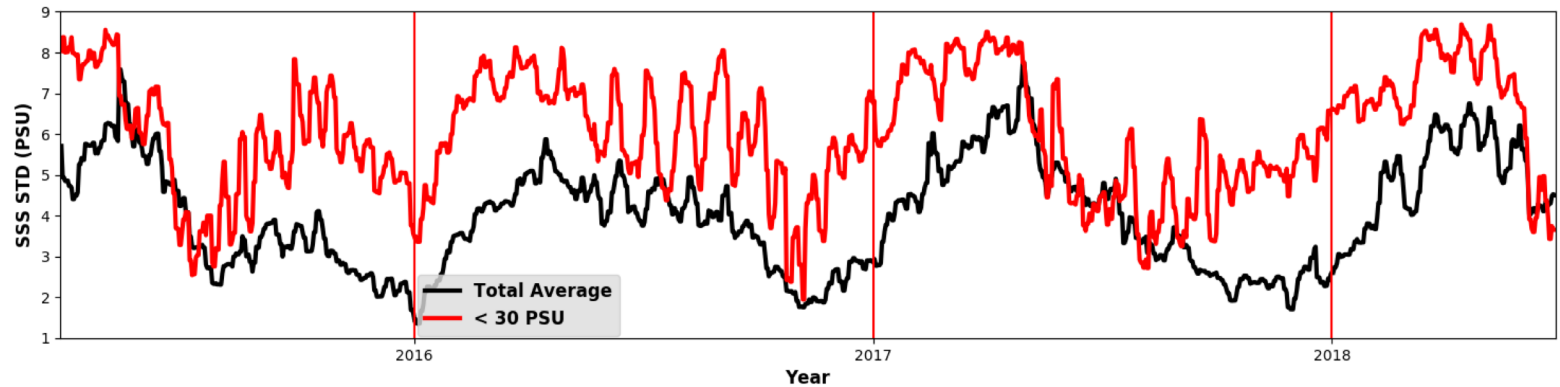


Region 2

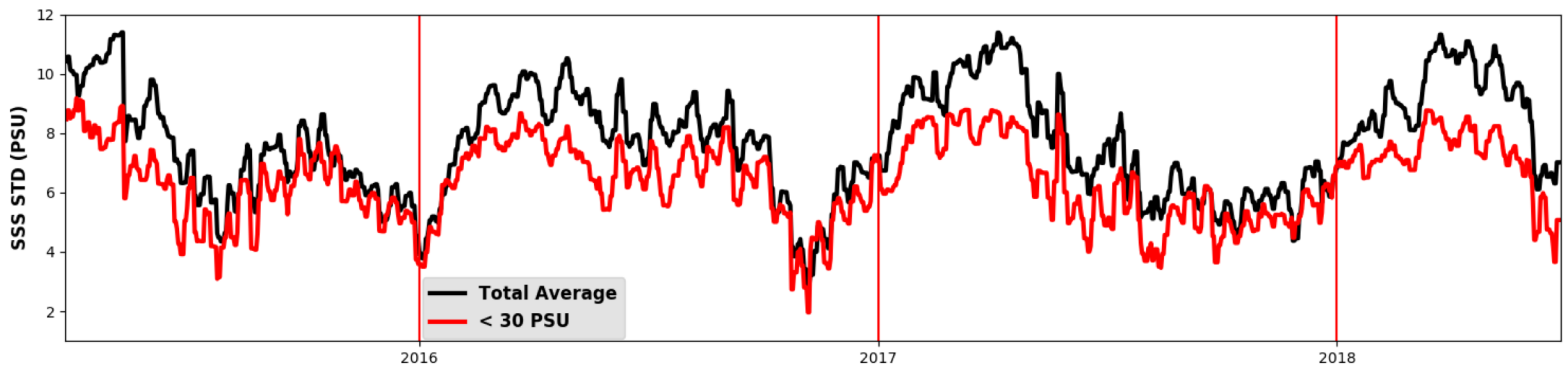


RSS SMAP 70 km SSS STD

Region 1

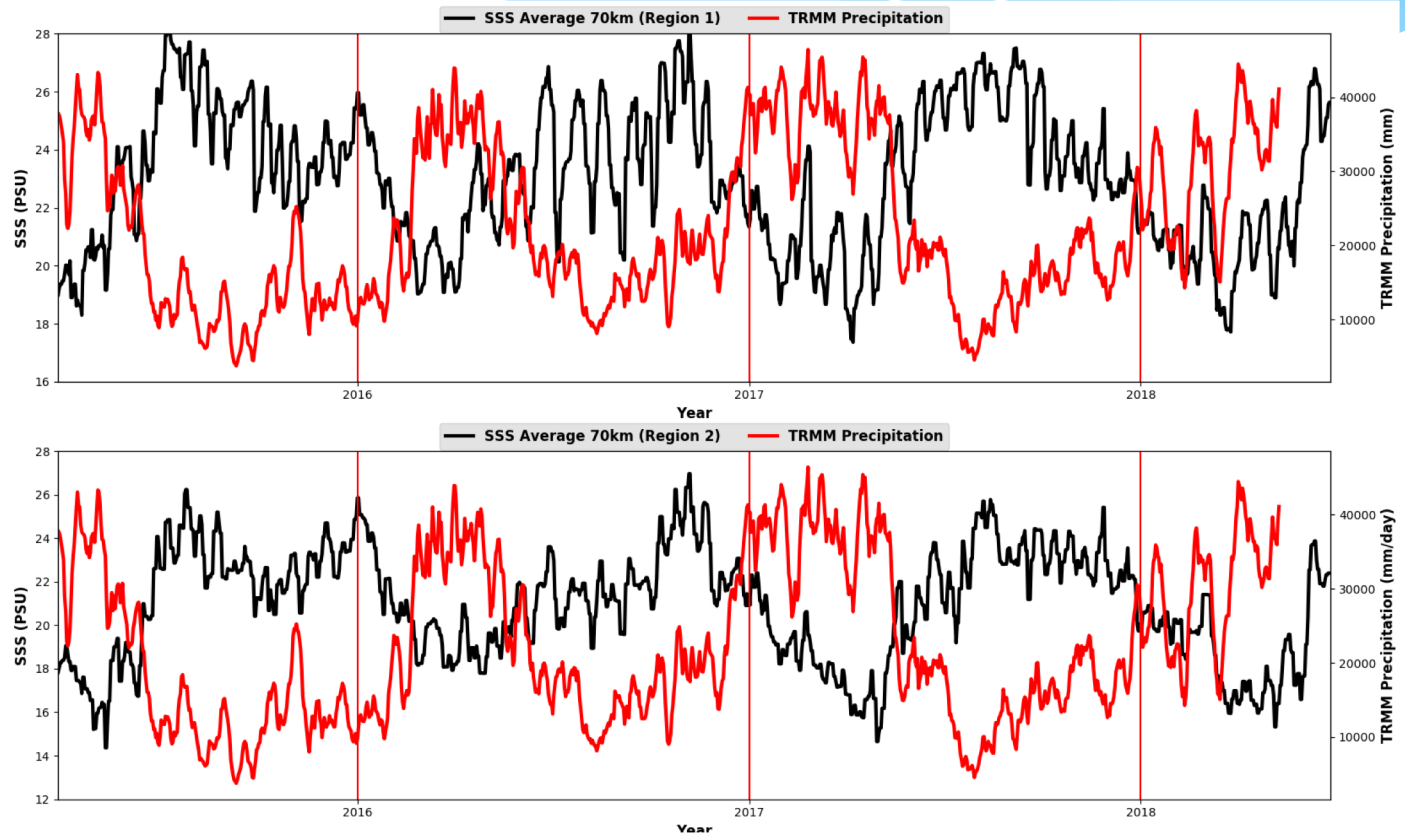


Region 2



SSS and Precipitation Comparisons

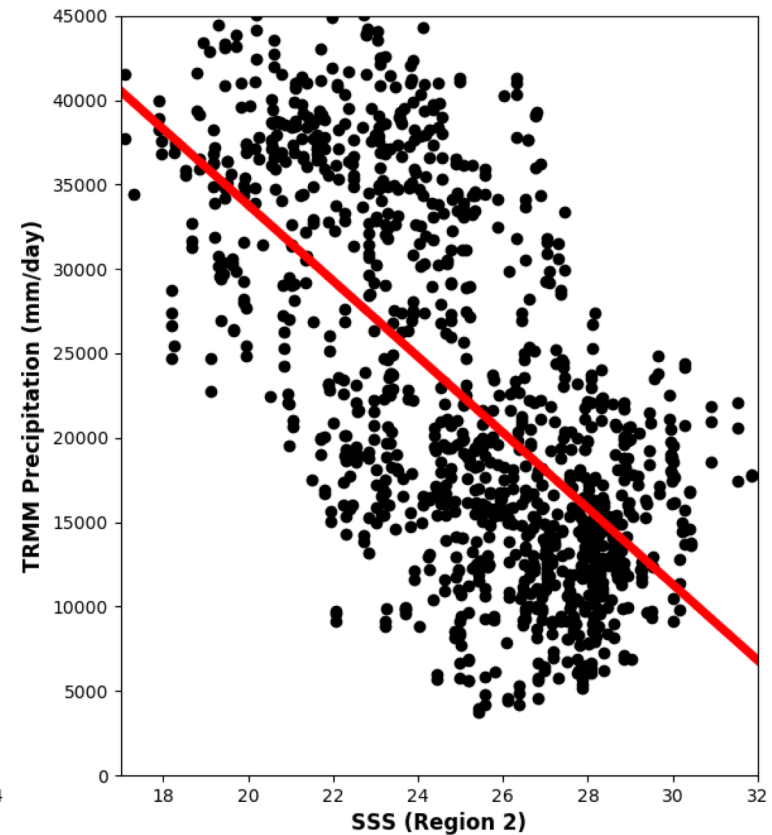
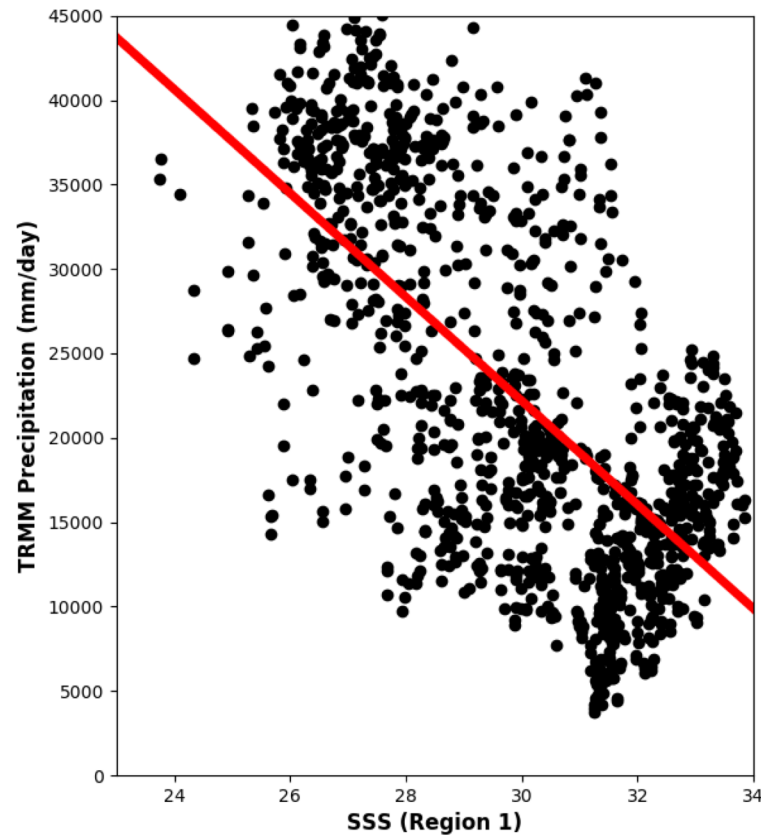
- **Red line shows the daily total Precipitation from TRMM measurement**
- **Top panel shows the SSS in region 1 and precipitation**
- **Bottom panel shows the SSS in region 2 and precipitation**



SSS and Precipitation Correlation

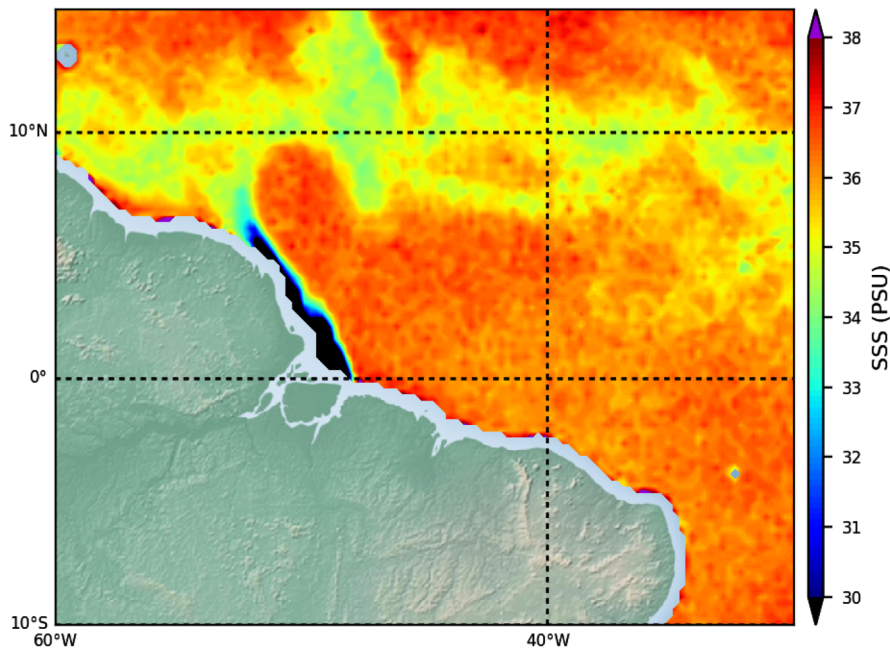
Region 1: Correlation Coeff -0.65

Region 2: Correlation Coeff -0.64

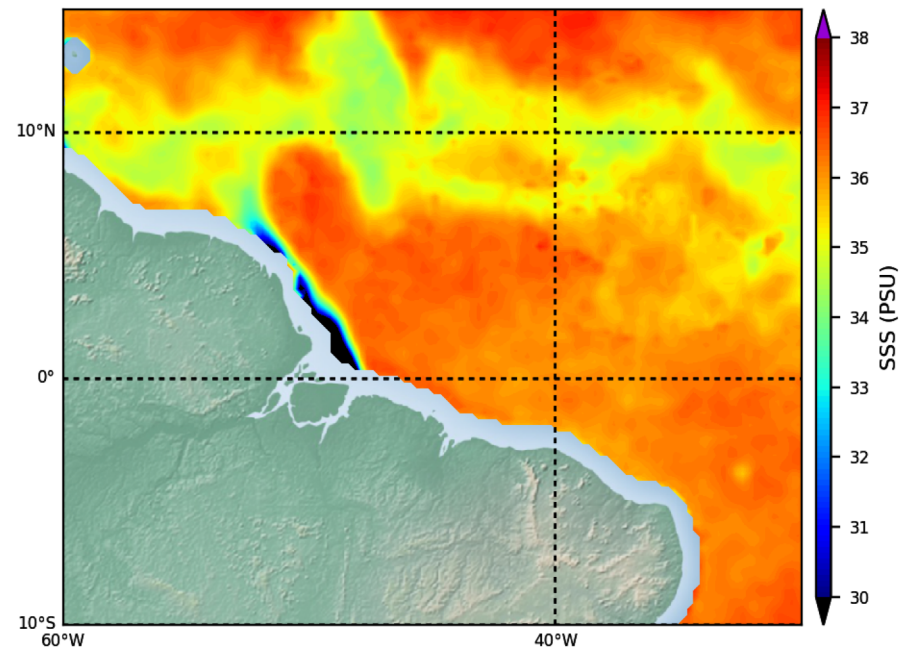


RSS SMAP 40km (left) and 70 km (right) Comparisons

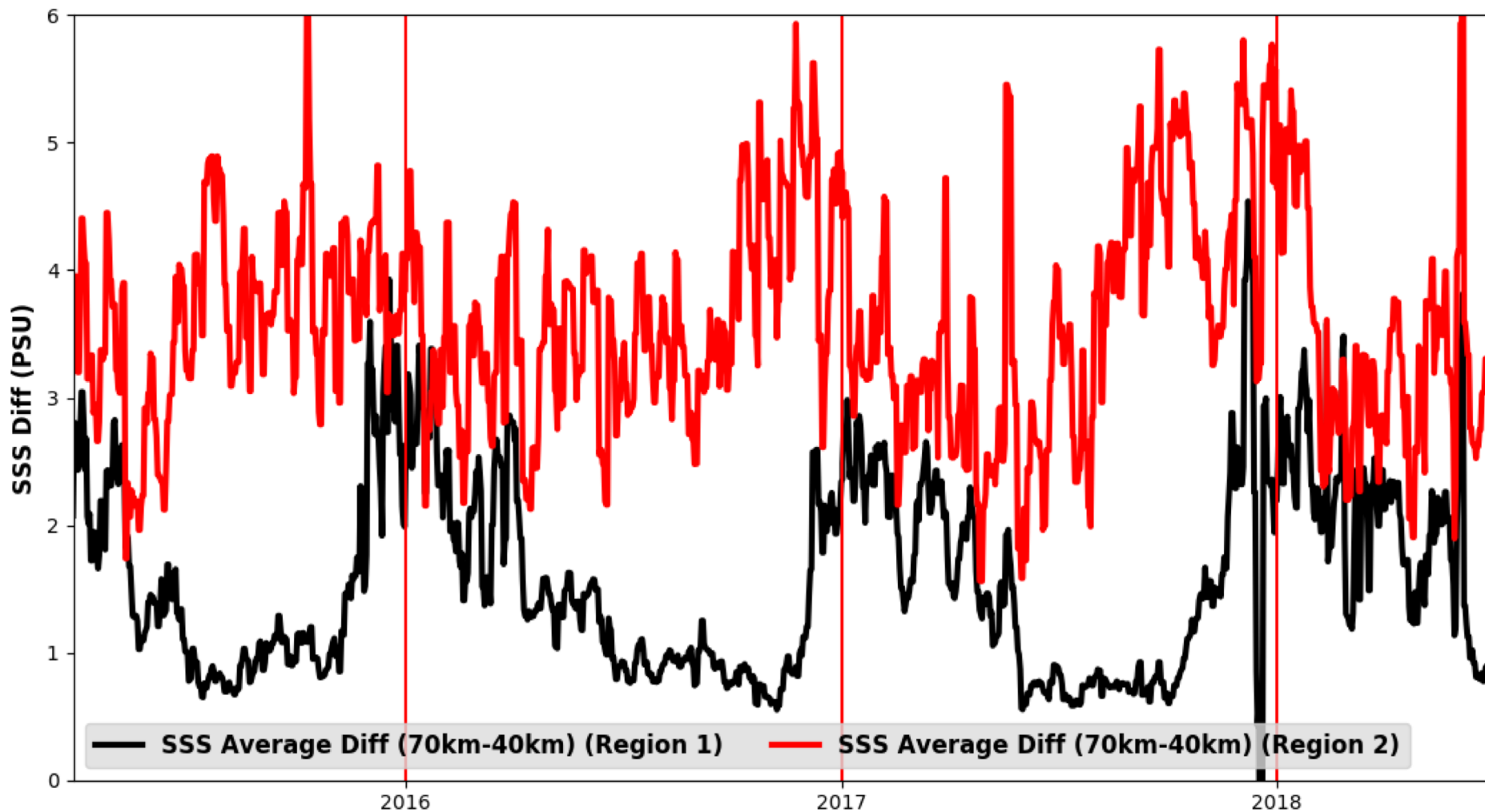
2017-10-27 (RSS SMAP 40km 8Day)



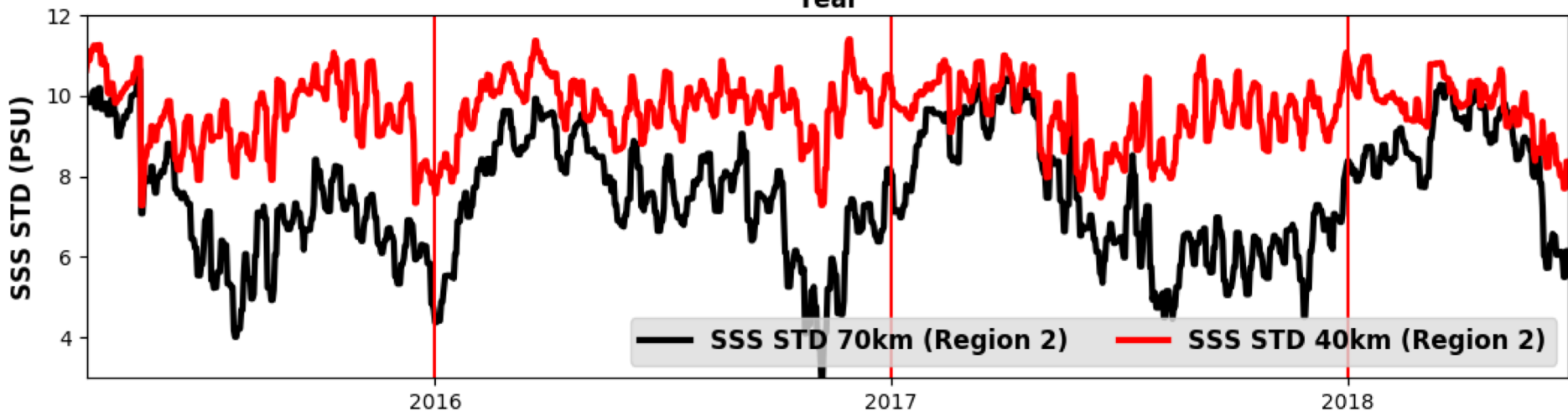
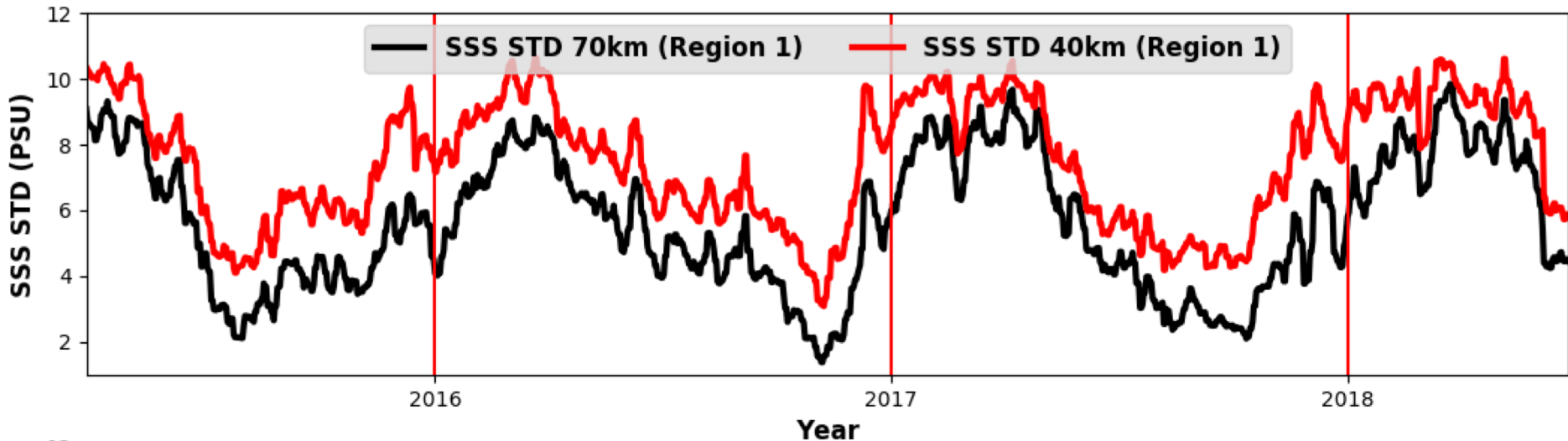
2017-10-27 (RSS SMAP 70km 8Day)



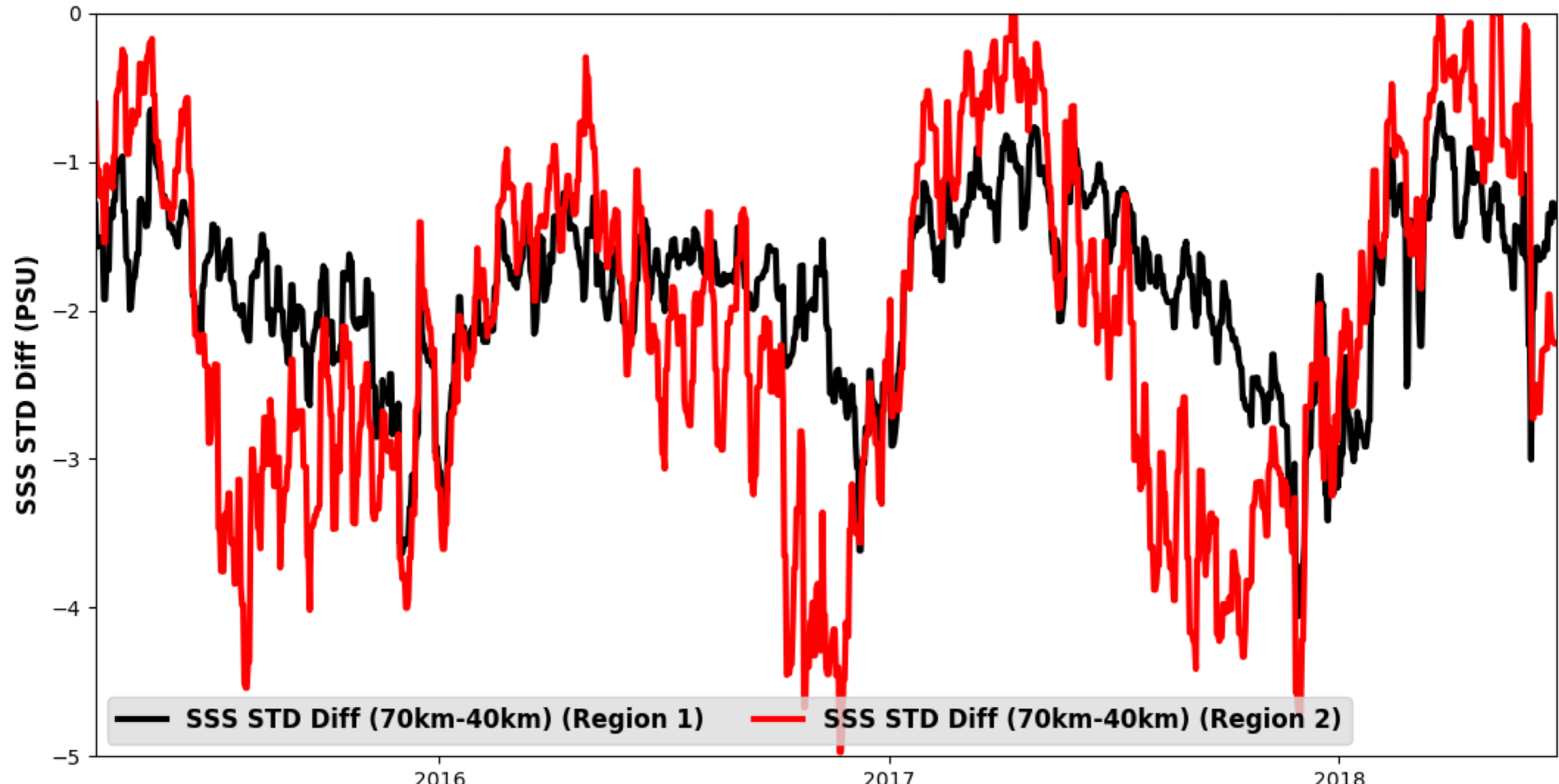
RSS SMAP Averaged SSS Differences between 40km and 70 km Datasets



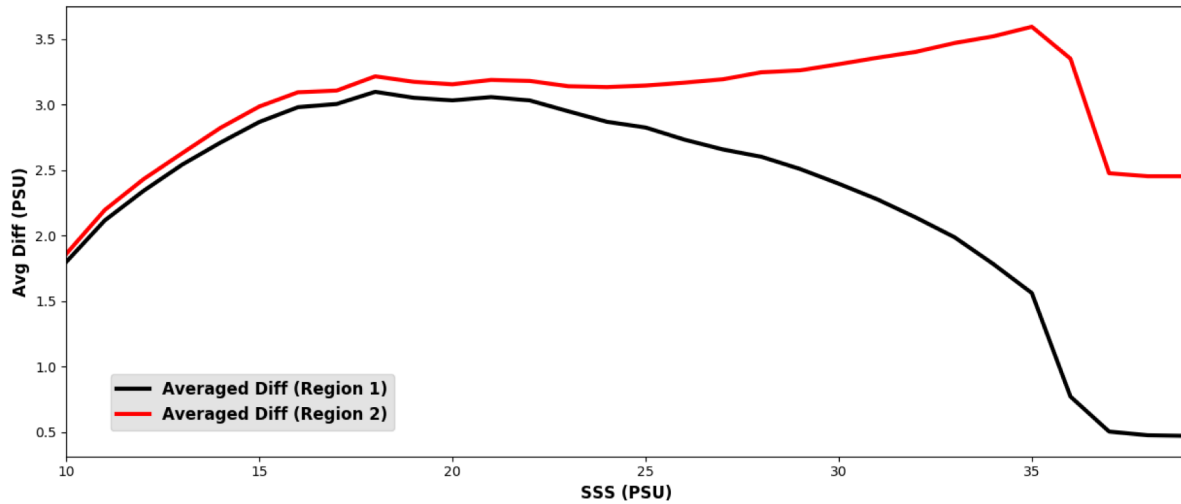
RSS SMAP SSS STD in Region 1 and Region 2



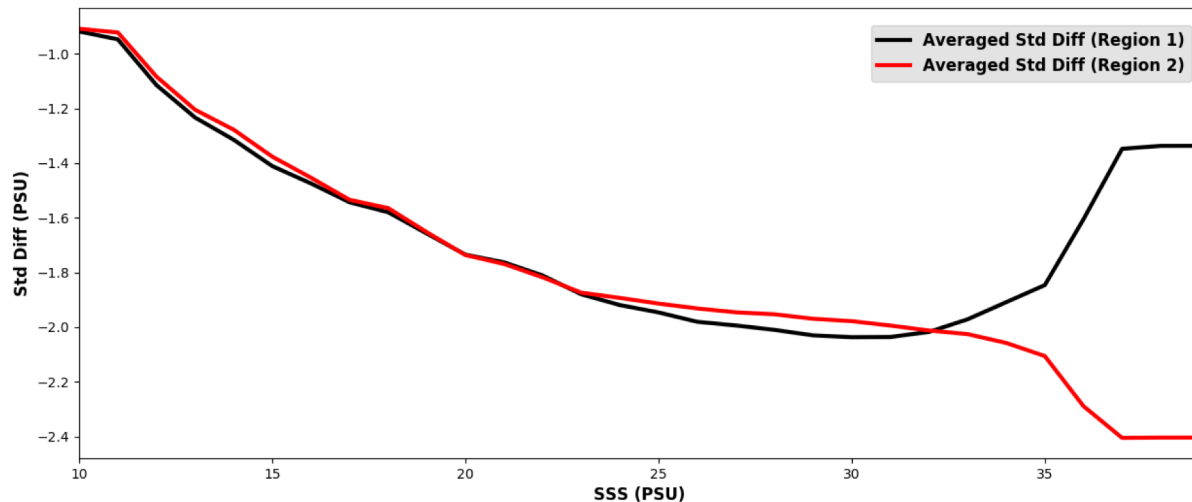
RSS SMAP SSS STD Differences between 40km and 70 km Datasets



RSS SMAP SSS Mean/STD Differences between 40km and 70 km Datasets



Mean Difference vs SSS (70km-40km)



STD Difference vs SSS (70km-40km)

Summary

- 1. SSS is anti-correlated with Precipitation from TRMM with the correlation coeff -0.65**
- 2. SMAP L3 40km and 70km Comparisons**

SMAP 70km-40km	Region 1	Region2
SSS Averaged Difference	0.5 - 3.6	1.5 - 3.60
SSS STD Averaged Difference	(-0.5) - (-2.0)	(-0.5) - (-2.4)

SMAP Sea Surface Salinity Animation in Amazon Region

2015-03-27 (RSS SMAP 70km 8Day)

