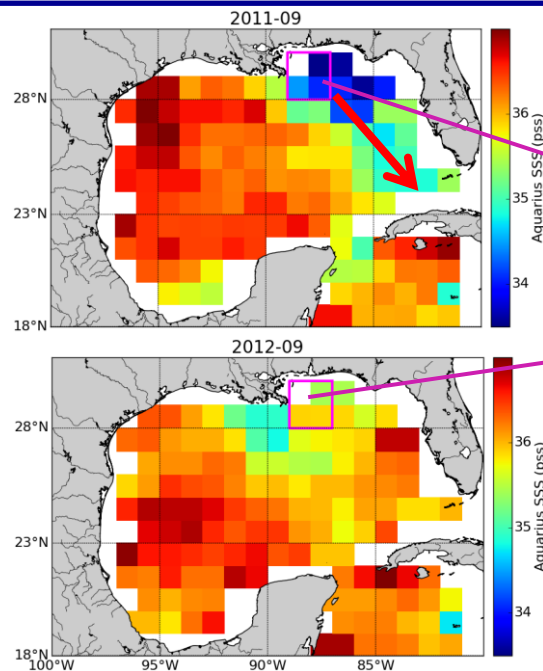
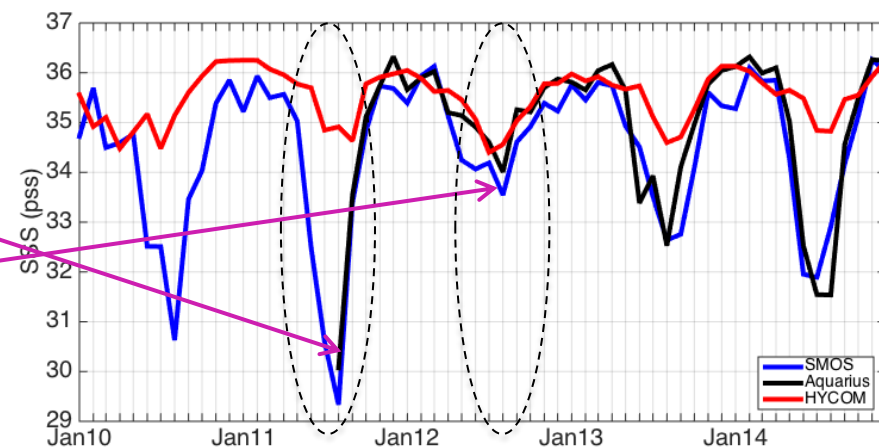


Aquarius & SMOS reveal large seasonal & interannual variations of sea surface salinity associated with the Mississippi River plume

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Aquarius SSS maps in September, near the time when the SSS in the magenta square region reaches a minimum in 2011 and 2012 and 4 months after the peak discharge. The red arrow symbolizes the direction of the plume pathway.



2010-2015 monthly time series of SMOS (blue), Aquarius (black) and HYCOM (red) SSS near the Mississippi mouth.

Problem: Lack of knowledge of salinity variations associated with large rivers that are important to air-sea and land-sea interactions.

Finding: Aquarius & SMOS detected large interannual changes of SSS in the Mississippi river mouth that state-of-the-ocean high-resolution global ocean assimilation products (e.g., US Navy's HYCOM operational analysis) failed to capture.

Significance: Aquarius/SMOS/SMAP salinity data provide valuable resources to constraint ocean analysis and forecast to study the linkage of ocean and regional water cycle.

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