



The North Atlantic Subtropical Surface Salinity Maximum as Observed by Aquarius

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The subtropical surface salinity maximum (SSS-max) in the North Atlantic was studied as part of the SPURS (Salinity Processes in the Upper Ocean Regional Study) experiment in 2012-2013. This paper documents the structure and variability of the SSS-max using Aquarius data during the two-year period August 2011 - August 2013. The Aquarius data show the seasonal migration and freshening of the SSS-max in good agreement with previous observations. The extent of the SSS-max has a surprisingly large amount of non-seasonal variability. It fluctuated in size during the course of the Aquarius era by about 27%. There has also been a general freshening of the area where the SSS-max is located, larger than any expected seasonal changes. The seasonal variability of sea surface salinity is documented. The SSS-max itself shows almost no seasonal variability of salinity, whereas to the north and south of it there is a well-defined seasonal cycle. This is consistent with the important role played by Ekman transport in the formation of the SSS-max.