

## **Recent results of ocean remote sensing research for global climate change**

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Recent ocean remote sensing missions and techniques of new generation of active and passive space borne remote sensing sensors have produced a remarkable data sets of high accuracy measurements of sea surface height, wind, roughness, temperature, clarity, phytoplankton pigment concentration, etc. One can now study, on a truly global basis, the fluid ocean and its variability due to global climate change at all periods between years and days, on all spatial scales from the global to about 20 meters. The accuracy and precision of the measurements are so good, that, with the help of the newly developed various remote sensing data processing techniques, a huge variety of phenomena can now be addressed. This talk will summarize new research results of the state of art remote sensing methods and applications for impacts of global climate changes on global and coastal oceans using altimeter, scatterometer, SAR, SST and Ocean Color data, and describe some of our recent cutting edge research and the recent attempts to combine satellite remote sensing with other in situ observations and techniques, to infer the three-dimensional time-varying ocean circulation, air-sea interactions, and global and regional oceanographic processes that relating to global climate change. As an example, I will present my recent research results about ocean's role in global water/energy cycles and meridional transport, which reported by the Science magazine recently.