

**Salinity Processes in the Upper Ocean Regional Study**  
**NASA Jet Propulsion Laboratory**  
**Video Transcripts**

**Video: Seagliders and Profilers**

**URL:** <https://vimeo.com/9349052> [02:54]

**Description**

Dr. Lou St. Laurent discusses seagliders (with a comparison to the Slocum glider) and the vertical microstructure profiler (VMP).

**Transcript**

There are two different classes of glider systems we'll be using. This particular one is an upper ocean glider which we will primarily be using for measurements in the upper hundred meters, but with a very special focus on the near surface properties. As it dives down it will perhaps go to a 100 meters, but every time it comes up it will be surfacing with very careful resolution of the last meter or so of sea water as you break the interface and get to the atmosphere.

The deeper classes of gliders we'll be using on the project are capable of doing 1000 meter profiles. For us we will probably focus on maybe the upper 500 meters with that system. I believe the University of Washington group which is also running a deep capable glider on this cruise will be doing the full 1000 meters.

*But it is not a Slocum glider, correct?* The alternative glider platform being used as part of SPURS is a system called seaglider which was designed at the University of Washington applied physics lab. It is similar [to the Slocum glider] in many regards. It is a buoyant sea-driven instrument system with a battery for powering scientific sensors. It is more specialized in regards to its ability to do long endurance missions. So whereas the Slocum system we're using is oriented towards mission times of about a month, and potentially extendable to several months, the seaglider system that the University of Washington will release is the one geared towards missions exceeding six months. They will be in fact deployed on six month missions as part of this science project.

The other instrument we will be deploying is called the vertical or deep microstructure profiler. It's basically a big tube that we drop in the water. It has this instrument platform on the front of it. As it descends in the ocean it will measure the microstructure of the ocean. What happens is when it gets to a certain pressure there are weights that release the instrument. Without the weights it is positively buoyant, and it will come back up to the surface. Then we will retrieve the instrument. Those instruments are capable of going down to the bottom of the ocean. We've taken them to 5000+ meters in the Pacific. We've spent time in different areas, but we've done them in the southern ocean and

other areas around the world. So it will be complimenting this in kind of a different way. This will get more of the path of the glider, whereas the VMP goes down in one location and will measure the entire profile of the ocean.