

Aquarius Overview - Web Video Transcript

Well, we're talking about salt in the ocean. We're talking about pretty much the same salt that you use in cooking: the chemical known as sodium chloride.

You've been to the beach. You've gone swimming in the ocean. You know that the ocean is salty.

What most people don't recognize is that the concentration of salt, or what we call salinity, varies quite a bit from one part of the ocean to another.

When water evaporates off the sea surface and goes into the atmosphere, that makes the water saltier, because you're taking fresh water out and you're leaving more salt behind.

As the minerals, or the salts, circulate around in the oceans, it moves heat around.

Heat that's carried by the ocean affects the atmosphere.

The changes of the atmosphere and the sea surface temperature is coupled together. It controls climate.

We have measured sea surface temperature.

We've measured winds over water, sea level rise, color of the ocean, but yet we do not know one of the fundamental properties that affect climate, which is the density of the concentration of salt in the ocean.

Salinity is one of the missing parameters, never been measured from space before.

We have no salinity samples at all from parts of the world, particularly in the southern hemisphere, in the South Pacific and South Atlantic and Southern Indian Ocean. So there is a big data gap.

This mission called Aquarius is one of the most exciting missions to date. It measures how salty the ocean is from space.

As you take a pinch of salt and put it in a gallon of water, we can measure that kind of sensitivity of salt from 408 miles above the Earth.

In seven days, we'll map the entire Earth, and go back to the same point, measuring it over and over again. And we'll monitor over time how the changes and variability are.

By having salinity information from space, we'll provide this missing link and make better predictions on the climate change and climate model.

All the measurements that we make in the Earth sciences program within NASA are really to better understand the climate processes that are happening now, how we can use that information to better predict the future, so we can plan better.

Salinity is one of those measurements that we need -- to fill an important gap to do that very thing. That's how it affects you and me and the person next door.

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