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Watching marine science in real time GEOMAR Wave Glider missions live on the internet

22 February 2017/Kiel. From now on, the Wave Glider missions run by the GEOMAR Helmholtz Centre for Ocean Research Kiel can be followed live on the internet. Wave Gliders are measurement platforms that are propelled by wave power. They are suitable for surveying the surface of the oceans for several weeks or even months. The internet portal “GEOMAR Navigator” has been set up to provide not only Wave Glider’s courses and velocities, but also the latest data they have collected from the ocean. The portal was developed as part of a scientific cooperation with Oman. A first test mission is currently taking place in the subtropical region of the North-East Atlantic.

The oceans' dimensions, the extent of their surface area and their volume, are gigantic. It is thus a tremendous task to survey them for data and to determine their current state. More and more, the range that can be covered by human researchers and their endurance are extended by instruments that are operated remotely and pre-programmed. The so-called Wave Gliders are part of this group. Surfboard-like buoys, propelled by wave energy, they can survey the sea surface for weeks or even months, carrying all kinds of sensors.

The GEOMAR Helmholtz Centre for Ocean Research Kiel now operates three Wave Gliders. From now on, their missions can be followed live on the internet platform “GEOMAR Navigator” (<https://waveglider.geomar.de/navigator>). “GEOMAR Navigator” makes its debut by showing the current missions of two Wave Gliders around a seamount near the Cape Verde Islands.

The website provides courses, velocities and past tracks, but also weather data, additional data collected by the sensors of the Wave Gliders and background information on the respective research project. “The platform was primarily developed to enable those who are in charge of a wave glider mission to check mission parameters from their office, from their sofa at home or from a hotel room”, explains Patrick Leibold. Working as a programmer within the GEOMAR technology transfer working group, Leibold has developed “GEOMAR Navigator”.

“In the end, however, anyone who is interested in the missions of our instruments can use the portal”, adds Dr. Warner Brückmann, head of technology transfer at GEOMAR. The two wave gliders that are currently active are part of cruise MSM61 of the German research vessel MARIA S. MERIAN. A whole set of different instruments is being used to enhance the understanding of the ecosystem around Senghor Seamount, a seamount north of the Cape Verde Island Sal.

One of the two Wave Gliders used for the test mission belongs to GEOMAR and has already been used as a marine measurement platform in the vicinity of the Cape Verde Ocean Observatory (CVOO) on several occasions. The second one has been contributed by the Bremen Center for Marine Environmental Sciences (MARUM). As Leibold, who is currently on board of MARIA S. MERIAN for this mission, says: “For us, this cruise is an important trial to check whether the portal works and if it is easily handled by researchers.”

The impulse for developing this portal and the funds for doing so were provided as part of a cooperation between GEOMAR and the state of Oman. In Oman, the newest GEOMAR wave

glider will soon be used to survey for near-shore submarine groundwater discharge. “It is the aim of the project to better understand freshwater systems in the subsurface of coastal regions. For Oman, such an understanding is vital. Freshwater is a very scarce resource there, and a key factor for livelihood. Mistakes in freshwater management might pose a threat to this resource”, Warner Brückman explains.

Yet, the online portal developed within the Oman project will be open to all groups which operate Wave Gliders at GEOMAR. “And even more”, says Dr. Brückmann: “German marine research in general can benefit from this technology, as is shown by our very first test mission in collaboration with MARUM.”

Note:

The development of GEOMAR Navigator is funded by the Oman Research Council (TRC).

Links:

www.geomar.de GEOMAR Helmholtz Centre for Ocean Research Kiel

<https://waveglider.geomar.de/navigator> Wave Glider Portal GEOMAR Navigator

<https://waveglider.geomar.de/navigator/?p=dashboard&m=SENGHOR&v=0> direct link to the current Wave Glider mission at Senghor Seamount

Images:

Images are available for download at www.geomar.de/n5028-e

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