



Press Release

67/2016

Conundrum of missing iron in oxygen minimum zones solved



2013. These samples were then extensively investigated for chemical, physical and biological parameters.

"Among other tasks microbiologists carried out genetic analyses of the microorganisms living in the water in order to evaluate which metabolic processes are predominant", Scholz explains. In addition, the team studied particle samples from the water column at the synchrotron radiation source at the Karlsruhe Institute of Technology (KIT). With this analysis they were able to determine which iron minerals occur in the different water layers.

These analyses revealed that the iron reacts with nitrate instead of oxygen. This is due to certain microorganisms, which are also responsible for the decomposition of bioavailable nitrogen. "So far, these processes have not

At the synchrotron light source at KIT, samples from the oxygen minimum zone off Peru are analyzed at high resolution. Photo: Florian Scholz, GEOMAR

Vertical and horizontal distribution of oxygen, nitrogen compounds and iron in seawater in the oxygen minimum zone off Peru. Decreasing concentrations of dissolved iron do not coincide with the occurrence of oxygen but with the increase of dissolved nitrogen compounds. Source: GEOMAR.