Hydrothermal vents as a 'new' source for some dissolved trace metals and the role of organic ligands for their stabilization.

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Many trace metals are essential for living organisms and are a crucial component of many metabolic processes. Iron (Fe) for example is necessary for photosyntheis, but due to its low solubility in seawater, dissolved Fe (DFe) concentrations in the ocean are exceedingly low, limiting phytoplankton growth in about 20% of the world's ocean and making it very important to understand the biogeochemical cyling in the ocean. Copper on the other side is both a micronutrient and toxicant to marine organisms and the effect is based on its free ionic form (Cu^{2+}), which in turn is defined by organic and inorganic ligands. Recently, it was shown that hydrothermal venting provides a significant source of DFe and DCu to the deep oceans[1].

In this talk I will present recent field and modelling data for copper and iron associated with hydrothermal venting.

References:

[1]Sander, S. G., Koschinsky, A., *Nature Geoscience* 4 (3), 145-150 (2011).