



## **AUSTRAL SUMMER INSTITUTE XIII UNIVERSITY OF CONCEPCIÓN**

**Understanding physical, chemical and biological processes in the marine environment**

**Trace metals in the oceanic carbon cycle**

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### **Description**

The oceanic carbon cycle is a major determinant for our past, present and future climate. Trace metals are an integral part of the oceanic carbon cycle and are major players for the efficiency of the oceanic carbon cycle. For instance iron is estimated to be limiting in over 30% of the world's oceans.

The course will focus on the importance iron and other trace metals have for the phytoplankton productivity in the oceans. Special emphasis will be on the distribution and sources of trace metals in the surface and the water column, the role and impact trace metals have on the phytoplankton growth cycle, the effect ligands have on the trace metal chemistry and how trace metals ultimately control the growth in the oceans and hence the oceanic carbon cycle.

### **Contents**

Iron and trace metals

Trace metal biogeochemistry

Sources and sinks of trace metals

Climate mitigation strategies