



Ca' Foscari
University
of Venice

PROJECT ACRONYM AND TITLE: BE-OIC - Beyond EPICA Oldest Ice Core: 1,5 Myr of greenhouse gas – climate feedbacks

FUNDING PROGRAMME: Horizon 2020 - LC

CALL: H2020-LC-CLA-2018-2019-2020

SCIENTIFIC FIELDS: Climatology

HOST DEPARTMENT: DAIS – Dipartimento di Scienze Ambientali Informatica e Statistica

SCIENTIFIC RESPONSIBLE: Barbara Stenni

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€ 11.199.456,25	€ 30.000,00

ABSTRACT:

To better constrain the long-term response of Earth's climate system to continuing greenhouse gas emissions, it is essential to turn to the past. A key advance would be to understand the shift in Earth's climate response to orbital forcing during the 'Mid-Pleistocene transition' [MPT, 900,000 (900 kyr) to 1.2 million years (1.2 Myr) ago], when a dominant 40 kyr cyclicity gave way to the current 100 kyr period. It is critical to understand the role of forcing factors and especially of greenhouse gases in this transition. Unravelling such key linkages between the carbon cycle, ice sheets, atmosphere and ocean behaviour is vital, assisting society to design an effective mitigation and adaptation strategy for climate change. Only ice cores contain direct and quantitative information about past climate forcing and atmospheric responses. However, the longest (EPICA) ice core record available to date covers only the last 800 kyr. The RIA Topic LC-CLA-08-2018 empowers the European ice core community to perform such an oldest ice core drilling and the project BE-OIC is taking on this unique challenge and opportunity. The overarching scientific objective driving BE-OIC is to obtain quantitative, high-resolution icecore information on climate and environmental changes over the last 1.5 Myr. The cause and effect relationship that led to the enigmatic MPT change in the climate system is not understood yet, as important information on global changes in the climate system is still missing. Most of this information, including the phasing of these changes in the Earth System can only be derived from a continuous ice core from Antarctica covering the last 1.5 Myr.

This proposal uses the planning derived during the recent BE-OI CSA, and offers an excellent team (the only team globally that could at present accept the challenge of the call), underpinned by excellent infrastructure and capacity, and is currently ensuring it has an excellent location for the core.

Planned Start date	Planned End date
01/06/2019	31/05/2025

PARTNERSHIP:

1. CONSIGLIO NAZIONALE DELLE RICERCHE	IT	Coordinator
2. ALFRED-WEGENER-INSTITUT HELMHOLTZ-ZENTRUM FUR POLAR- UND MEERESFORSCHUNG	DE	Partner
3. UNITED KINGDOM RESEARCH AND INNOVATION	UK	Partner
4. INSTITUT POLAIRE FRANCAIS PAUL-EMILE-VICTOR GIP	FR	Partner
5. AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE	IT	Partner
6. CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS	FR	Partner
7. UNIVERSITEIT UTRECHT	NL	Partner
8. NORSK POLARINSTITUTT	NO	Partner
9. STOCKHOLMS UNIVERSITET	SE	Partner
10. UNIVERSITAET BERN	CH	Partner
11. KOBENHAVNS UNIVERSITET	DK	Partner
12. UNIVERSITE LIBRE DE BRUXELLES	BE	Partner