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LE PROJET SCIENTIFIQUE
THE SCIENTIFIC PROJECT

INFORMATIONS GENERALES / *GENERAL INFORMATION*

NOM DE LA CAMPAGNE / *CRUISE NAME* : IMAGES Subclimate

INSTITUTION RESPONSABLE / *SPONSORING INSTITUTION*

Institut Polaire Français, Paul Emile Victor (I.P.E.V.)

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INSTITUTIONS EN CHARGE DU PROJET / *SCIENTIST IN CHARGE OF THE PROJECT*

Responsible: **Dr. Gerhard Kuhn**

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Fax: +49 471 4831 1923
E-mail: Gerhard.Kuhn@awi.de

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COLLABORATION

Responsible:	**Prof. Werner Ricken**
Address:	Univ. of Cologne, Köln, Germany
Phone:	+49 221 470 2537
Fax:	+49 221 470 5149
E-mail:	Werner.Ricken@uni-koeln.de

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PROGRAMME IMAGES
Subclimate PROGRAM

DESCRIPTION DU PROJET / *PROJECT DESCRIPTION*

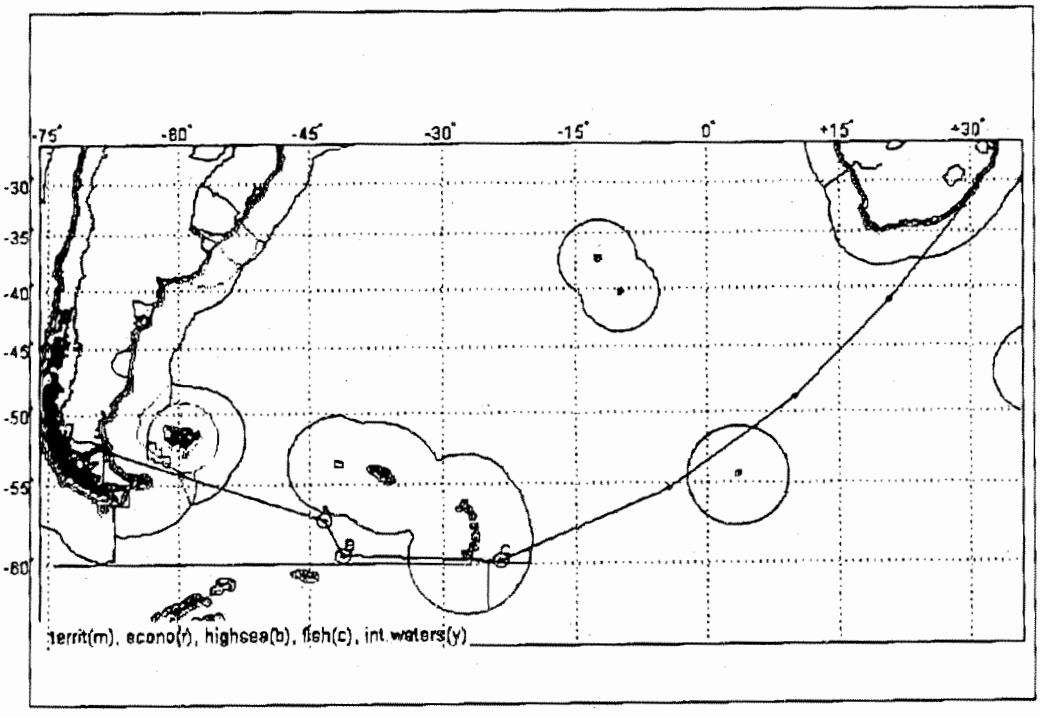
The project SUBCLIMATE intends to study suborbital climate cycles of the Weddell Sea and the Scotia Sea as part of the Southern Ocean Initiative of the International Marine Past Global Change Study (IMAGES) program. Scientific goals of our study are (i) a high-resolution insight into ice-sheet dynamics. Through a combination of bottom water and surface water climate signals, we will investigate internal and external forcing factors that influence, for instance, (ii) Antarctic Bottom Water production and the associated development of the Southern Ocean and the global thermohaline circulation. In addition, our aim is to data the retreat of the Antarctic ice masses (iii) at the end of the last glacial, and to conduct (iiii) a bi-polar comparison of suborbital climate change.

To achieve this goal, we will create ultrahigh-resolution paleoclimate proxy records through a combination of traditional analytical means on long piston cores to be taken with the RV Marion Dufresne in the Scotia Sea region. The core sites have been pre-investigated by cruises with RV Polarstern (Pos. A+B, ANT-XXII/4 April to May 2005, Chief Scientist H.-W. Schenke and Pos C, ANT-X/2 Aug.-Sept. 1992, Chief Scientist R. Gersonde, Alfred-Wegener-Insitute, Germany, with UK Notification).

LOCALISATION DES OPERATIONS / *OPERATIONS LOCATION*

Only 1 core lies in the UK EEZ. Its location is shown in the table below.

Carotte *Core*	Latitude	Longitude	Profondeur *Depth*
CALYPSO	59°50,48′ S	23°23,0′W	4813 m


-75°
-60°
-45°
-30°
-15°
0°
+15°
+30°
-30°
-35°
-40°
-45°
-50°
-55°
-60°
territ(m), econo(r), highsea(b), fish(c), int.waters(y)

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LE NAVIRE
THE VESSEL

Nom *(name)* :	**MARION DUFRESNE**
Propriétaire *(owner)* :	GIE MD2 C/o CMA-CGM 4 quai d'Arenc 13002 MARSEILLE – France
Armateur *(operator)* :	CMA-CGM 4 quai d'Arenc 13002 MARSEILLE – France
Affréteur *(charterer)* :	IPEV Technopôle Brest Iroise BP 75 29280 PLOUZANE – France
Port d'immatriculation *(port of registry)* :	Marseille (France)
N° d'immatriculation *(Registration nbr)* :	RI 829498 D
N° OMI *(IMO number)* :	9050814
N° de registre BV *(BV nbr)* :	39H084
Date de pose de la quille *(Keel fitting date)* :	23/08/1993
Date de mise en service *(delivery date)* :	10/05/1995
Indicatif Radio *(call sign)* :	FNIN
Méthodes et possibilités de communication *(Contact)* :	Fréquences internationales *(international frequencies communication)*
Téléphone *(phone)* :	(00) 870 322 723 521 or (00) 870 763 578 513
Fax :	(00) 870 763 977 782 or (00) 870 322 723 531
Telex :	0583 322 723 510 + or 0583 422 723 510+
Longueur hors-tout *(length overall)* :	120,50 m
Largeur *(moulded breadth)* :	20,61 m
Creux sur quille *(moulded depth)* :	11,30 m

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Tirant d'eau été *(summer draft)* :	6,963 m
Franc-bord été *(summer free board)* :	457 mm
Port en lourd été *(summer DWT)* :	4871 tons
Déplacement léger *(displacement)* :	5499 tons
Capacité commerciale *(freight capacity)* :	2500 t or 5600 m^3, 110 TEU containers
Jauge brute *(gross tonnage)* :	9403 UMS
Jauge nette *(net tonnage)* :	2820 UMS
Jauge Suez *(Suez tonnage)* :	Brute/*Gross*: 10186,80 - Nette/*Net*: 7571,82 (Danube rules)
Tirant d'air *(air draft)* :	42,60 m moins. T.E. (minus draft)
Hauteur de l'œil sur l'horizon *(Vision level on the horizon)* :	22,60 m moins T.E. (minus draft)
Moteurs de propulsion *(main engines)* :	2 x 3000 kW
Lignes d'arbres *(prospeller shafts)* :	2
Gouvernail *(steering gear)* :	2 safrans Becker (2 flap rudders)
Propulseur d'étrave *(box thruster)*:	1 x 740 kW
Groupes électrogènes *(generators)* :	2 x 2880 kW et 1 x 2100 kW
Vitesse de croisière *(crusing speed)* :	15 knots
Vitesse maximale *(maximum speed)* :	16 knots
Equipement de levage *(lifting gear)* :	2 x 25 t SWL

CAPACITES :

Equipage *(number of crew)* :	10 officers + 19 crew + 20 embarked stevedores (journaliers)
Capacité totale maximale *(maximum capacity)* :	160 persons
Nom du commandant *(name of master)* :	Jean-Paul HEDRICH – François DUCHENE
Scientifiques embarqués *(scientific crew)* :	See attached listing
Capacité soutes *(bunker capacity)* :	1600 tons
Combustible fret (GO) *(GO cargo capacity)* :	1000 CBM
Réserves d'eau douce *(fresh water)* :	488 tons
Capacité ballasts *(ballast capacity)* :	1100 tons

RADIOCOMMUNICATION et RADIONAVIGATION
SHIP'S EQUIPMENT

	Nbr	Equipment	Type & Model	Frequency	Emitting power
Satellite Coms	1	Inmarsat-B	NERA Saturn B	1,6 GHz	33 dBW
	1	Inmarsat Fleet77	NERA F77	1,6 GHz	
	1	Inmarsat-C	SKANTI ScanSat-CG	1,6 GHz	140W
Distress Search & Rescue	1	EPIRB Sarsat-Cospas	KANNAD 406 WH	406Mhz + 121,5Mhz	5W
	2	SART	SERPE Rescuer	9GHz	0,5W
	1	Automatic Identification System	SKANTI AIS2100	162 MHz	12W
HF & VHF Coms	1	Primary Marine USB Transceiver	SKANTI TRP8400	bande 1,6 - 4 MHz	400W
				bande 4 - 27,5 Mhz	400W
	1	Secondary Marine USB Transceiver	SKANTI TRP8750	bande 1,6 - 4 MHz	750W
				bande 4 - 27,5 Mhz	750W
	2	Marine VHF Transceivers	SKANTI VHF3000	bande 156-162 MHz	25W
Bridge	1	X-Band Radar	DECCA C.342/6	9380-9440 MHz	25kW
	1	S-Band Radar	DECCA C.343-S90	3040-3060 MHz	30kW
	1	High-Depth Echo Sounder	JRC JFE-570SD	50kHz	2 kW
	1	Small-Depth Echo Sounder	JRC JFE-570S	200KHz	2 kW

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LES EQUIPEMENTS SCIENTIFIQUES
SCIENTIFIC EQUIPMENTS

PARTICULARITES DES METHODES ET INSTRUMENTS SCIENTIFIQUES UTILISES SUR LE N.O. MARION DUFRESNE

PARTICULARS OF METHODS AND SCIENTIFIC INSTRUMENTS USED ON BOARD R/V MARION DUFRESNE

Types d'échantillons et de données ***Types of samples and data***	**Méthodes utilisées** ***Methods to be used***	**Instruments utilises** ***Instruments to be used***
Carottes sédimentaires *Sediment cores*	Carottages *Coring*	Carottier géant CALYPSO *Giant corer CALYPSO*
Carottes sédimentaires *Sediment cores*	Carottages *Coring*	Carottier CASQ *CASQ corer*
Navigation	Triangulation GPS (ou DGPS) *Triangulation GPS (or DGPS)*	Récepteurs GPS (ou DGPS) *GPS (or DGPS) receivers*
Bathymétrie et imagerie *Bathymetry and imagery*	Sondeur multifaisceaux *Multibeam*	Sondeur multifaisceaux THALES *Multibeam THALES*
Profils sédimentaires *Subbottom profiles*	Sondeur de sédiments *Subbottom profiler*	Sondeur 3,5 kHz *3.5 kHz echo-sounder*
Anomalie gravimétrique *Gravity anomaly*	Mesure de la gravité *Gravity measurement*	Gravimètre marin embarqué *Shipborne gravimeter*
Anomalie magnétique scalaire de surface *Surface scalar magnetic anomaly*	Mesure de l'intensité du champ magnétique total *Total magnetic field intensity measurement*	Magnétomètre à proton de surface tracté (câble ~200 m) *Surface-towed proton magnetometer (~200 m wire)*
Vitesse de courant *Currentmeters measurements*	Courantomètre *Currentmeters mooring ADCP*	Courantomètre ANDERRA *ANDERRA currentmeter*

PROGRAMMATION
PLANNING

DATES

L'opération IMAGES-Subclimate est programmée / *The IMAGES-Subclimate cruise is planned:*

- Du / *From*: **1st March 2007** départ de / *Departure:* Punta Arenas (Chile)
- Au / *To*: **22nd March 2007** arrivée à / *Arrival:* Reunion Island

Dates prévues pour la première entrée et le départ final de la zone de recherche par le navire océanographique / *Expected dates of first entry into and final departure from the research area of the research vessel*

- Date d'entrée / *Date of entry:* **2nd March 2007**
- Date de sortie / *Date of departure:* **10th March 2007**

PORTS D'ESCALE / *PORTS CALLS*

Nom des ports qui seront sollicités / *name of intended port*

- Port de départ / *Departure harbour:* Punta Arenas (Chile)
- Port d'escale / *Port call:* Durban (South Africa)
- Port d'arrivée / *Arrival harbour:* Reunion Island

Demande logistique faite à ces ports / *any special logistical requirements at port of call*

Aucune. Embarquement des observateurs et scientifiques britanniques.
None – British observers and scientists boarding.

LES AGENTS MARITIMES
THE MARITIME AGENTS

Reunion Island

CMA-CGM - La Réunion
3 rue Velasquez
BP 2007
97822 LE PORT CDX - LA REUNION
Phone: (02 62) 55 10 16 (10) / Fax: (02 62) 43 23 04
E-mail: lar.ggrosset@cma-cgm.com
Contact : Gérald GROSSET

Punta Arenas

Agencias Maritimas Broom (Punta Arenas) y Cia Ltda
Roca 924 Punta Arenas
Phone: +56 61 203400 , fax +56 61 203420
E-mail: operationspuq@ajbroom.cl

PIC Jean Michel Aguila Ops Mngr (AOH +56 9-92190462)
E-mail: operations@ajbroom.cl

Durban

CMA CGM Shipping Agencies South Africa Pty Ltd Agency B
3rd Floor, Office 302
Grindrod Mews - 106 Victoria Embankment - East End 4018; PO Box 149142
1004 Durban
Phone: 27 31 302 7007 / Fax: 27 31 302 7188
E-mail: dba.genmbox@cma-cgm.com

LES PARTICIPANTS
THE PARTICIPANTS

EQUIPE BRITANNIQUE / *BRITISH TEAM*

Les autorités concernées du Royaume-Uni nommeront en temps voulu les participants à cette campagne.
The concerned authorities of United Kingdom will nominate in due time the participants in this cruise.

PERSONNELS SCIENTIFIQUES ISSUS DE LABORATOIRES FRANÇAIS
SCIENTISTS FROM FRENCH LABORATORIES

Nom *Surname*	Prénom *First name*	Nationalité *Nationality*	Fonction *Position*	Organisme *Organism*
BONSANG	Bernard	French	Scientist	CNRS
BROOKES	Daniel	English	Scientist	Univ. of Leicester, UK
CUSTER	Tom	American	Ph-D student	Max Planck Inst., Germany
DAGMAR	Kubistin	German	PhD student	Max Planck Institute, Germany
GEBHARDT	Sarah	German	Ph-D student	Max Planck Inst., Germany
GURK	Christian	German	Engineer	Max Planck Institute, Germany
HARDER	Hartwig	German	Scientist	Max Planck Inst., Germany
HOFFMANN	Thorsten	German	Scientist	University of Mainz, Germany
HOSAYNALI BEYGI	Zeinab	Iranian	PhD student	Max Planck Institute, Germany
KLIPPEL	Tim	German	Ph-D student	Max Planck Inst., Germany
LIAKAKOU	Eleni	Greek	Ph-D student	ECPL, Univ. of Crete, Greece
MARTINEZ-HARDER	Monica	German	Scientist	Max Planck Inst., Germany
PARCHATKA	Uwe	German	Engineer	Max Planck Inst., Germany
RUDOLF	Markus	German	Engineer	Max Planck Inst., Germany
SARDA-ESTEVE	Roland	French	Technician	CEA
SCHOTT	Matthias	German	Ph-D student	University of Mainz, Germany
SCIARE	Jean	French	Scientist	CNRS
SINHA	Vinayak	Indian	Ph-D student	Max Planck Inst., Germany
TSCHRITTER	Jens	German	Phd student	Univ. Heidelberg, Germany
WASTINE	Benoît	French	Engineer	CEA
YASSAA	Noureddine	Algerian	Scientist	Max Planck Inst., Germany
ZÖLLNER	Eckart	German	Post-Doc Student	IFM Geomar, Kiel, Germany
ZORN	Sören	German	Ph-D student	University of Mainz, Germany
GOURDON	Pierre	French	Student	LSCE
JEAN BAPTISTE	Vincent	French	Student	LSCE
BORY	Aloys	French	Maître conférence	Université de Lille 1
BOUT-ROUMAZEILLES	Viviane	French	CR CNRS	Université de Lille 1

PERSONNELS TECHNIQUES / *TECHNICAL STAFF*

Nom *Surname*	Prénom *First name*	Nationalité *Nationality*	Fonction *Position*	Organisme *Organism*
MORIN	Xavier	French	Engineer	IPEV
OLLIVIER	Bernard	French	Engineer	IPEV
RIGAUT	Frédéric	French	Engineer	IPEV
SANGIARDI	Pierre	French	Engineer Assistant	IPEV
X		French	Doctor	IPEV
X		French	Secretary	IPEV

PERSONNELS SCIENTIFIQUES ISSUS DE LABORATOIRES NON FRANÇAIS
SCIENTISTS FROM LABORATORIES OTHER THAN FRENCH

Nom *Surname*	Prénom *First name*	Nationalité *Nationality*	Fonction *Position*	Organisme *Organism*
KUHN	Gerhard	Germany	marine Geologist	Alfred Wegener Institute
GERSONDE	Rainer	Germany	marine Geologist	Alfred Wegener Institute
WEBER	Michael	Germany	marine Geologist	University of Cologne
REICHELT	Lucia	Germany	Student	University of Cologne