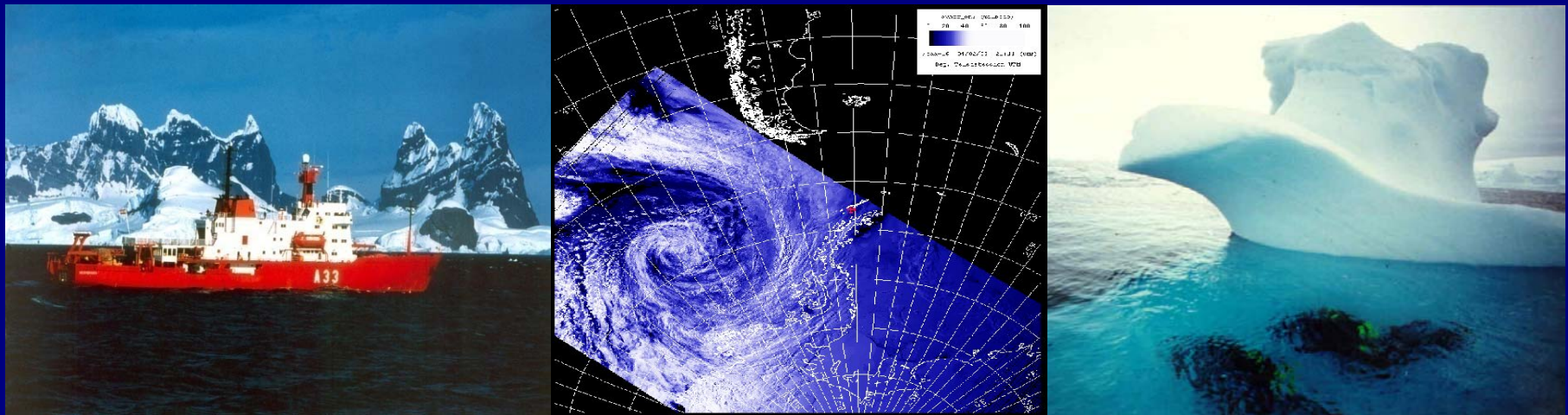


# The Marine Technology Unit

## A Challenge for Oceanography Development in Spain



Juan José Dañobeitia  
Jaume Piera  
(UTM- CSIC)

# UTM CSIC

*The UTM reorganizes his activity in 2000 after a “Junta de Gobierno” CSIC decision, to face the increasing requirements and challenges of the Spanish Marine Science. The UTM benefits from the UGBO (1992) old structure to accomplish such significant reestructuration*

*The UTM together with the Marine Science Institute belongs to the Natural Resources Area of the CSIC, and both are integrated in the Mediterranean Centre for Marine and Environmental Research.*

## *Functions & responsibilities*

### National Service for Marine Science

Large Scale Facilities (maintenance & logistics):

- **Oceanographic Research Vessels**
- **Antarctic Stations**

Marine Research & Technological development



## ■ *Research Vessels*

# *R/V Sarmiento de Gamboa (since 2007)*

*Built as multipurpose research vessel in 2007*

- Global (not polar)
- Overall length: 70 meters
- Crew 16 / Scientists 26
- 24 hours per day
- 8000 m depth deployed equipment





# ■ *Research Vessels*

## ■ *BIO HESPERIDES*



*It was built and launched on March 12, 1990 commissioned to the Spanish Navy, and based based upon the Port of Cartagena (Spain).*

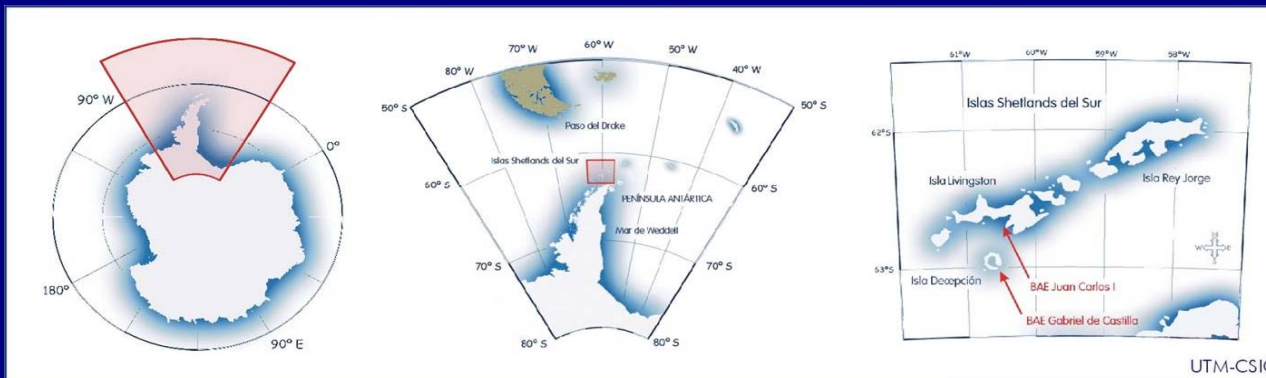
- . Displacement: 2.830 Tn
- . Length: 82.5 m.
- . Width: 14.3 m.
- . Draught: 5.5 m.
- . Propulsion: 2 x 1.400 kW
- . Generators:
  - 2 x 1.300 kW.
  - 2 x 650 kW.
- . Service speed: 10 knots
- . Range of operation:
  - 12.200 miles /12 knots /40 days
- . Capacity:
  - 35 Scientist / 54 Crew



# Antarctic Base: BAE Juan Carlos I



- The main Spanish scientific station in Antarctica (since 1988).
- Multidisciplinary stations: Glaciology, hydrology, geology, geophysics, biology, limnology, etc.
- The activity is focused during the Austral summer, although the rest of the year we keep automatic recording from different physical variables.
- Pioneer in the use of alternative energies (solar, eolic)





# BAE – Occupation

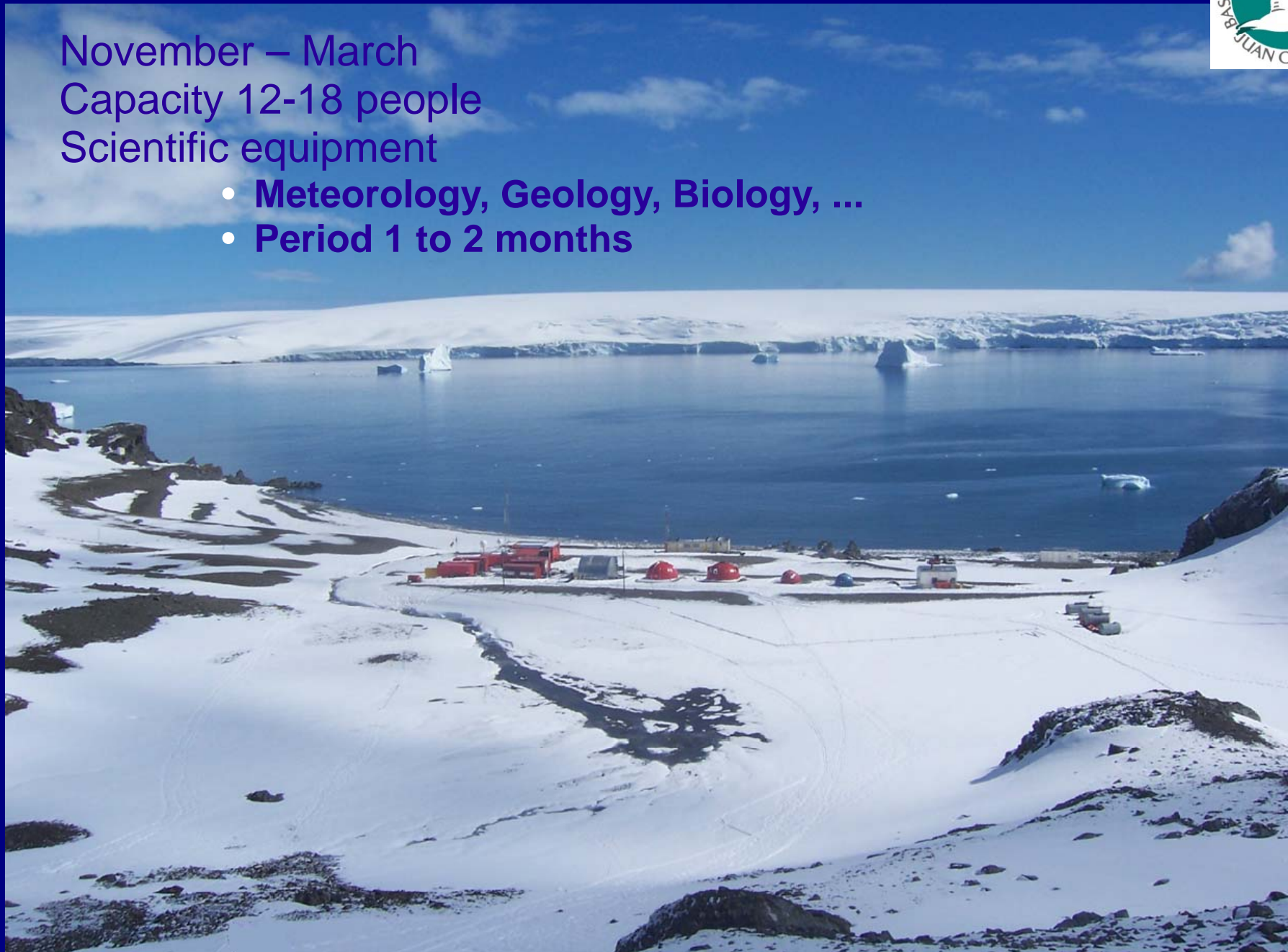


November – March

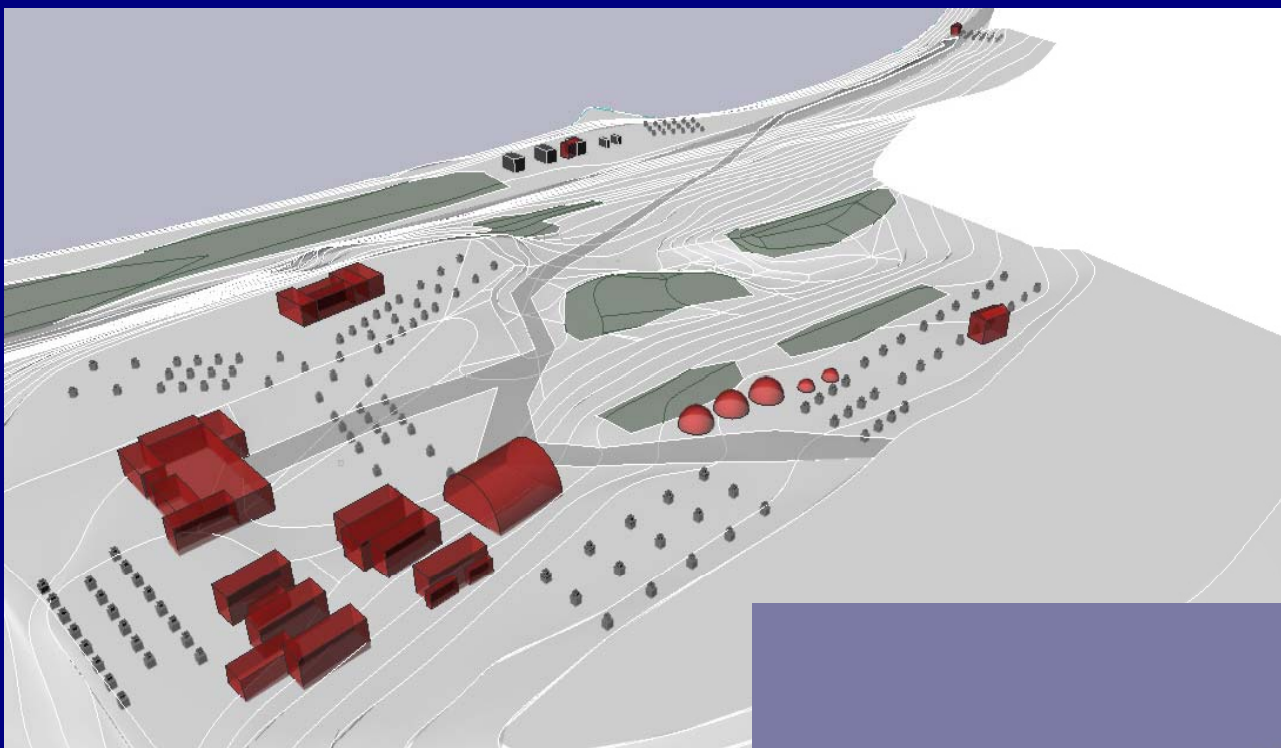
Capacity 12-18 people

Scientific equipment

- **Meteorology, Geology, Biology, ...**
- **Period 1 to 2 months**



# New Antarctic Station Juan Carlos I



# Characteristics of the New Antarctic Station Juan Carlos I

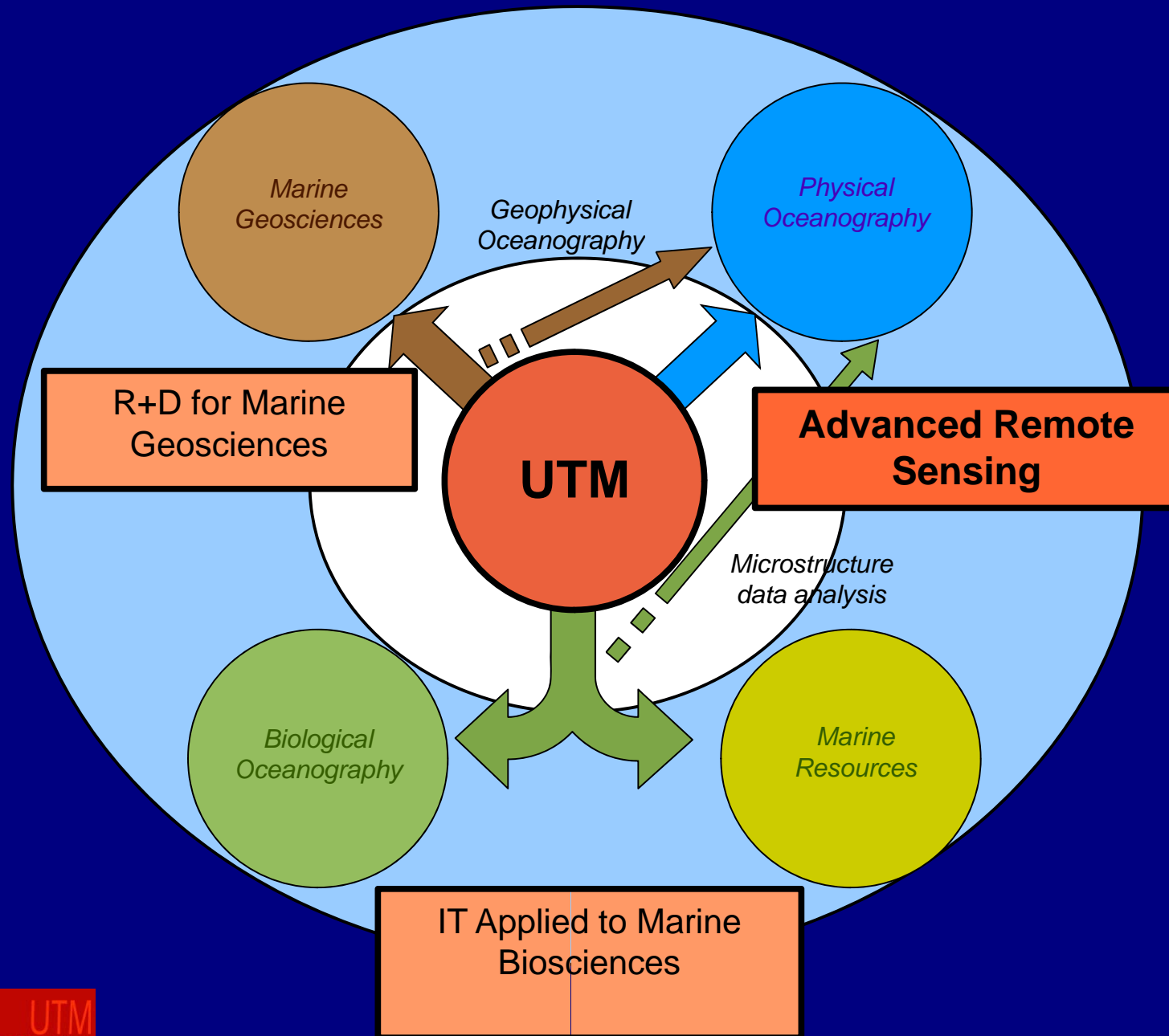


## •Main Characteristics of the Project

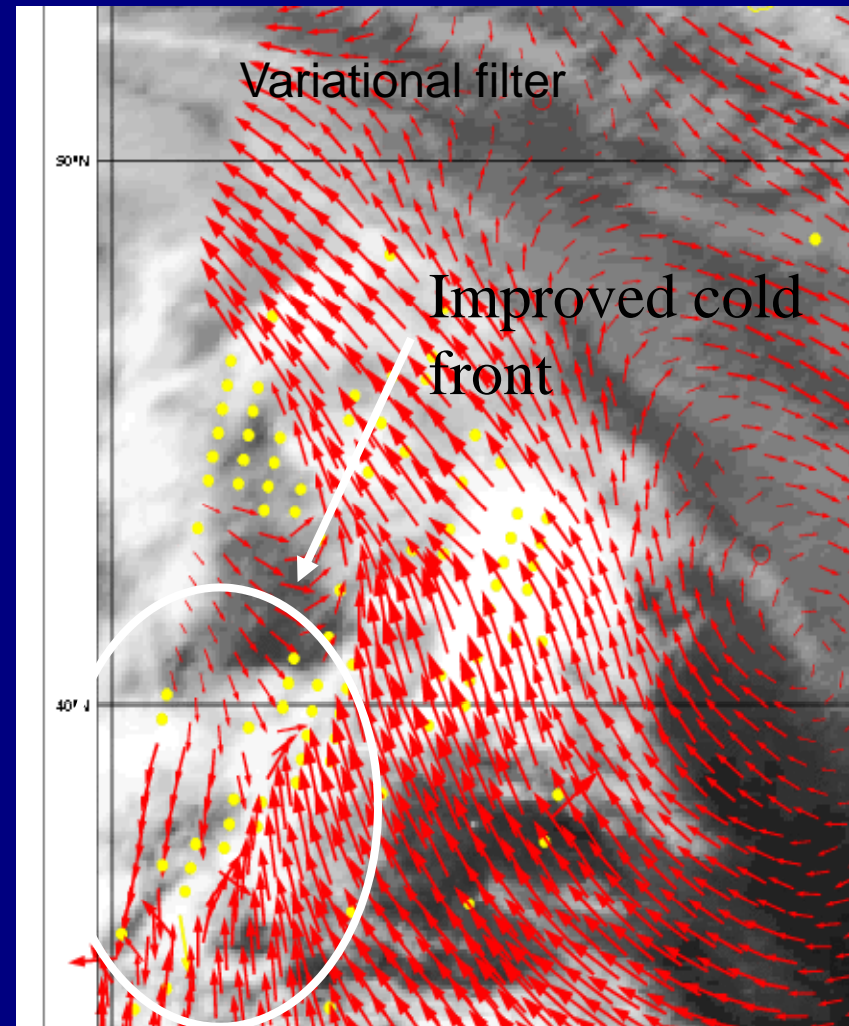
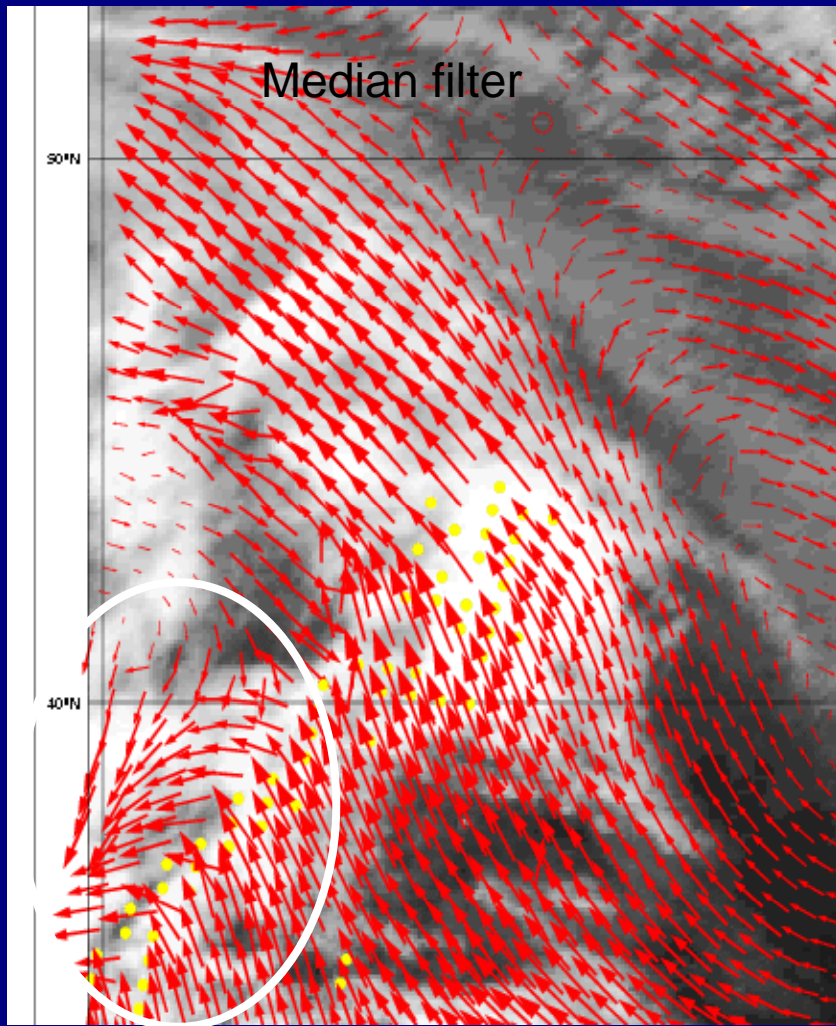
- 24 independent berths
- Maximum capacity for 45 persons (2020-2025)
- Exterior Structure of minimum maintenance
- Electric power: cogeneration system (electricity and hot water, efficiency >85 % and fuel consumption 30% less)
- Plant of sea water desalination (human consumption and fire prevention)
- Plant of treatment of wastewater MBR type
- Broad band Communications, redundant with INMARSAT, cellular phone through satellite, HF y VHF



# UTM. Research Lines



# Advanced RS. Scatterometry



*Portabella and Stoffelen, QJRS 2004*

# Advanced RS

## Eumetcast receiving station

NRT satellite data, including ASCAT L2 data





# Advanced RS

## Links with ICM Reserach

**SMOS**

**Data assimilation in  
Oceanic Models**

