VOCALS South East Pacific Regional Experiment Workshop

PERU COASTAL COMPONENT:

ACTIVITIES ONBOARD RV JOSE OLAYA

Boulder, 11th- 12th, 2007

COLABORATIONS & RELATED PROJECTS

- Upwelling Coastal Dynamics, Biogeochemical cycles and Paleooceanography in the Humboldt Current System Program (IMARPE)
- El Niño effects and Decadal changes in the Dynamics of regional circulation, water masses and communities (IMARPE)
- Modelling of processes in the Humboldt Current Ecosystem- Peru (IMARPE)
- Cardumenes project, P.I. Mariano Gutierrez and Andrés Chipollini (IMARPE)
- IMARPE, Unidad de Investigaciones en Oceanografia Quimica and MBARI Monterrey Institute
- Improvement of the Capacity of El Níño Phenomenon prediction for Prevention and Mitigation of its negative impacts in Peru (IGP)
- « Cardumenes » project, P.I. Mariano Gutierrez and Andrés Chipollini (IMARPE)
- ANR 2006 PCCC «Peru Chile Climate Change" project, P.I. Boris Dewitte (LEGOS)
- GMMC 2005 FLOPS «Floats of the South-Eastern Pacific : Study of water masses, oxygen minimum zone and mesoscale eddies in the South-Eastern Pacific» project, P.I. Alexis Chaigneau (LOCEAN) and Gérard Eldin (LEGOS)
- GMMC 2006 MESUP «Méso-échelle et sub-mésoéchelle dans l'upwelling du Pérou nord», P.I. Vincent Echevin (LOCEAN)
- PhD thesis : «Impact du forçage atmosphérique moyenne échelle dans un modèle régional océanique du système de courant de Humboldt», (funds IFREMER/CNES)
- PhD thesis : «Impact du changement climatique dans un modèle régional océanique du système de courant de Humboldt », (funds by IRD/CLS)

Approach

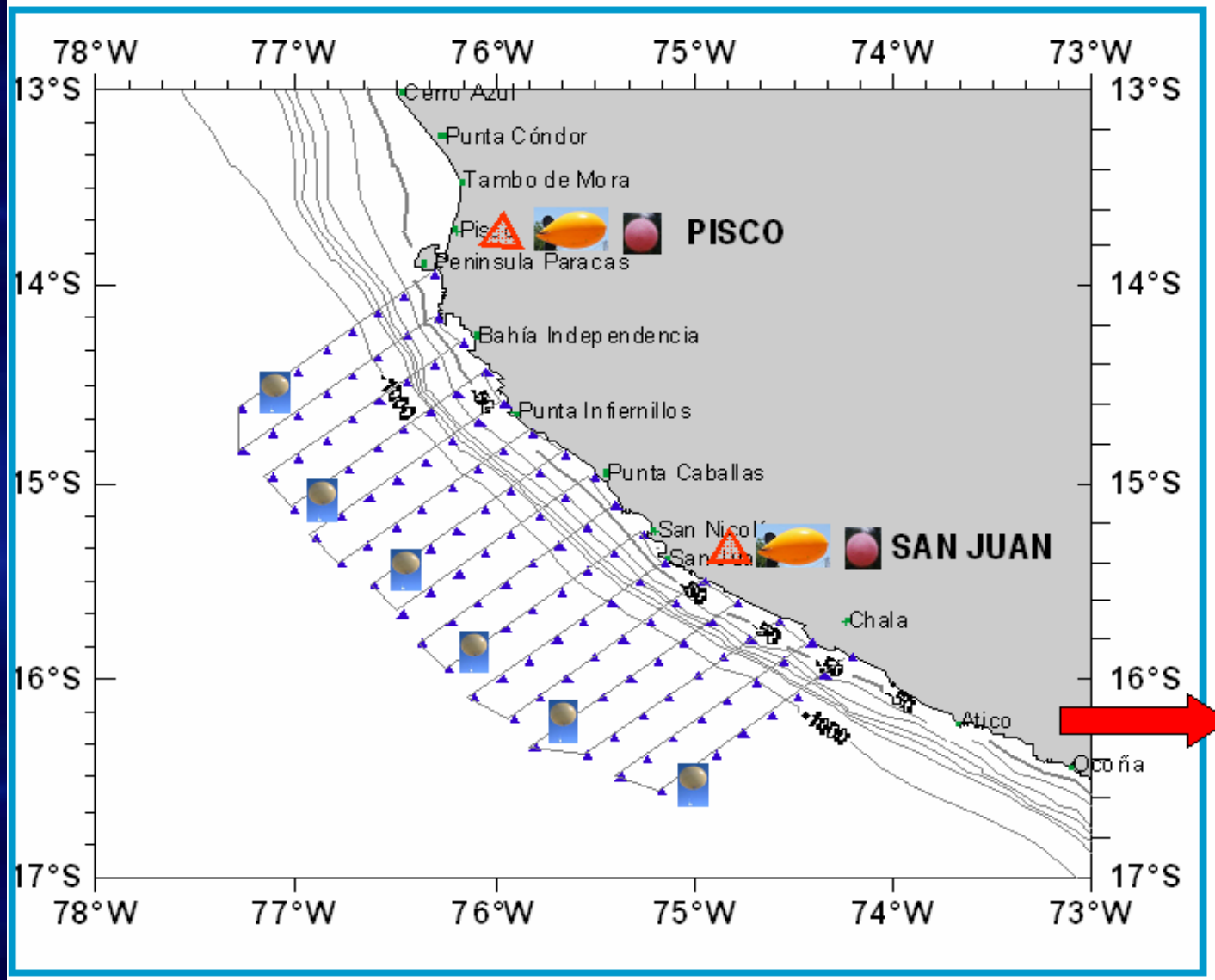
Multidisciplinary documentation of the study area in order to understand its role in the exchange of atmospheric, physical, biogeochemical properties between the coastal/land zone and offshore ocean.

- A retrospective analysis of existing data (historical *in-situ* data and satellite measurements),
- Planned pre-VOCALS cruise complementary activities (September 2007-October 2008)
- **An intensive observational phase based on a 13 day cruise,**
- Diverse modeling experiments using a multidisciplinary model platform (including atmospheric, oceanic and biogeochemical components).

RV Jose Olaya – Main Characteristics

MATRÍCULA INDICATIVO	CO-17706-EM, OASQ
ESLORA TOTAL	40,6 m.
MANGA	8,30 m.
PUNTAL	3,70 m.
FUEL CAPAC.	35,000 gl.
FRESH WATER CAPAC.	60 ton:
CRUISE VELOC.	10,5 nudos
MAIN ENGINE	1,050 HP, Caterpillar 3512TA
FUEL CONSUMP.	850 gal./día
WATER CONSUMP.	4 m3
AUTONOMY	30 días
ACOMMOD.	30

PERU VOCALS Proposed Track (Oct.-Nov, 2008)



Summary – Proposed Measurements

ATMOSPHERIC	In land	Surface measurement	Air temperature, Humidity, Sea Level Pressure, Wind speed and direction, Cloudiness (cloud cover, height, types), Weather and visibility
		Vertical profile	Air temperature, Humidity, Pressure, Wind speed and direction
	On cruise	Surface measurement	Air temperature, Humidity, Sea Level Pressure, Wind speed and direction, Cloudiness (cloud cover, height, types), Cloud base height, Weather and visibility
		Vertical profile	Air temperature, Humidity, Pressure, Wind speed and direction

OCEANOGRAPHIC & BIOGEOCHEMISTRY COMPONENTS	Coastal stations	Surface measurement	Sea Surface Temperature. Sea Surface Salinity, Sea Surface Oxygen Phytoplankton
	On cruise	Surface measurement	Temperature, Salinity, Horizontal Velocities
		Vertical profile	Temperature, Salinity, Vertical Velocities Oxygen content, Fluorescense, Chlorophyll-a, Nutrients (NO3, PO4, SiO3, SiO4), pCO_2 Phytoplankton, Zooplancton (eggs-larvae)
FISHERY RESOURCES	Acoustic measurements		Zooplankton, (copepods; euphausiids; gelatineous); micronekton (squat lobster), fish (anchovy and others)
	Laboratory Analysis		Post processing of acoustic data If trawl sampling: fish biology and stomach content analysis

FACILITIES, EQUIPMENT AND OTHER RESOURCES

FACILITY	INSTRUMENTS	SPONSOR	Observations	REQUEST STATUS	COST ESTIMATE	CONTACT DETAILS
R/V JOSE OLAYA	Rosetta, Seabird with CTD-O_2 & Fluorescence sensors, Seacat 19 plus, 12 Niskin bottles 2,5 lts	IMARPE	T,S,O2	approved	n/a	DIO/Luis Vásquez
	Automatic Weather System- **VAISSALA** Hydromet Systems Model MAWS100	IMARPE	AP, Ta, Wind speed/velocity, Relative Humidity	approved	n/a	DIO/Luis Vásquez
	Ship-mounted **ADCP RD** Instruments 75 KHz	IMARPE	Current marine velocity/direction	approved	n/a	DIO/Luis Vásquez
	Portasal **GUILDLINE** model 8410A	IMARPE	Salinity	approved	n/a	DIO/Luis Vásquez
	FURUNO T1 temperature sensor	IMARPE	Temperature	approved	n/a	DIO/Luis Vásquez
	Ecosounder **SIMRAD** EK 500 38/120 kHz	IMARPE	Ecotraces	approved	n/a	DGIP (Martín Salazar)
	pCO2 sensor LI-COR model 6262	IMARPE/MBARI	pCO2	approved	n/a	UIOQ/Jesus Ledesma/Dr. Francisco Chavez

FACILITIES, EQUIPMENT AND OTHER RESOURCES

FACILITY	INSTRUMENTS	SPONSOR	OBSERVATIONS	REQUEST STATUS	COST ESTIMATE	CONTACT DETAILS
EXTERNAL EQUIPMENTS	Nutrient Autoanalyzer	LOCEAN/--?	NiO_3,NO_2,PO_4,Si_2O_3	TBS		Yves du-Penhoat
	Flow Camp 0.2-75 mm	?	micro/nano plankton	TBS		???
	Flow Citometer <0.2 µm	?	ultra nanoplankton	TBS		???
	Surface drifters	?		TBS		Yves du-Penhoat
	Glider	LOCEAN		TBS		Vincent Echevin
	Radiosonde receiver & expendables	?	T, Hum, wind	TBS		Yamina Silva
LAND STATIONS	Callao, Pisco	IMARPE	T,S,O_2	approved	n/a	DIO/Enrique Tello
	Callao,Pisco, Ilo	DHN	Tw, Ta, Winds, Pa, Hum	approved	n/a	Yamina Silva
COMPLEMENTARY EQUIPMENT	2 tethered balloons:	IGP	Ta, Humidity up to 2Km	approved	n/a	Yamina Silva
	* Cable for 2 tethered balloons	IGP		approved	n/a	Yamina Silva
	* Sensors for Temp and humidity for tethered balloons with data logger	IGP		approved	n/a	Yamina Silva
	* Winch for 2 tethered balloons	IGP /???		1 required		Yamina Silva
	Helium for radiosondes, pilot and tethered balloons	??		TBS		Yamina Silva
	* 2 Theodolites for pilot balloons:	IGP /???	Wind	1 required		Yamina Silva
	* Ballons for pilots	??				Yamina Silva

Words of Gratefullness

To VOCALS Programm for funding the peruvian participation to this meeting,

To NCAR for hosting the workshop