



Ofício nº 0303/2004-DIR

São José dos Campos, 01 de Junho de 2004

Prezado Dr. Mac Dowell,

Estamos encaminhando a proposta anexa de que o CPTEC/INPE seja considerado uma "Affiliated Institution" nos termos do Artigo X do Acordo de Criação do IAI para um programa de bolsas oferecido aos países membros do IAI para estágio no CPTEC. O objetivo é de realizar pesquisas no tema de Variabilidade Climática que corresponde ao item I da Agenda Científica do IAI e é de interesse do CPTEC.

Para prosseguir nos trâmites estamos solicitando que seja feita uma consulta ao COP (Conference of the Parties) nas sua próxima reunião em Buenos Aires em 29 de junho.

Atenciosamente,

Luiz Carlos Moura Miranda
Diretor

Ao Excelentíssimo Senhor
Dr. Antonio M. A. MacDowell
Presidente do Conselho
Instituto Interamericano para Pesquisa
em Mudanças Globais-IAI
São José dos Campos-SP

LFP/mkuf

Proposal

CPTEC/INPE as Affiliated Institution of IAI for a Program on Climate Variability in the Americas

1. Introduction

This is a proposal of a Program on Climate Variability in the Americas to be developed at CPTEC as an Affiliated Institution of IAI. The objective of such Program is to offer the opportunity of research internship co-sponsored by IAI to scientific and profesional personnel of IAI member countries. The facilities offered by CPTEC are computer time and advise on model run and interpretation, as well as office facilities, for the duration of the internship. The Program will have a duration of 2 years, renewable.

2. Supercomputer Infrastructure at CPTEC

CPTEC, the Center for Weather Forecast and Climate Studies of INPE, has as a mission: *to be a major weather and climate forecast center based on up to date scientific and technological capacity in order to continuously improve the meteorological information for the benefit of society.*

CPTEC started operations in 1994. Besides operations, research and development in numerical weather and climate forecasts, CPTEC represents a large investement in personnel capacity building. The personnel at CPTEC includes today 57 scientists with Doctorate and 62 with Master degrees of a total of almost 300 employees.

Computer power evolution of CPTEC since the beginning of operations may be seen in Table 1.

Table 1. Evolution of supercomputer power at CPTEC

	1994	1998	2002	2004
	SX3	SX4	SX6-1 st part	SX6
# Nodes	1	1	4	12
# Procesors	1	8	32	96
Peak Performance	3.2 GFlops	16 GFlops	256 GFlops	768 GFlops
Memory	0.5 GBytes	8 GBytes	128 GBytes	768 GBytes
Storage	60 GBytes	220 GBytes	70 TBytes	1 PByte

The models available today may be seen in <http://www.cptec.inpe.br> including several products from:

- Global model run for weather and climate forecast and ensembles
- Regional ETA model run for weather forecast and climate forecast downscaling
- Environmental model run for air pollution

3. Research objectives

The focus of research will be item I of the IAI Science Agenda

I - Understanding Climate Change and Variability in the Americas including:

- Tropical Atlantic Variability (TAV), El Niño-Southern Oscillation (ENSO) and other forms of low-frequency climate variability.
- Ocean variability, including sudden climate change, and its influence on climate and weather of the surrounding continents.
- Variability of the American Monsoon systems.
- Ocean/Land/Atmosphere interactions and Hydrology, including atmospheric mesoscale processes.
- Global and regional changes in the water cycle.
- Aerosol impact on climate change and variability.
- Climate change at regional scales: scenarios, impacts, vulnerability and adaptation.
- Climate changes in the past.

Candidates will have an appointed CPTEC supervisor. CPTEC expects to develop collaboration with individuals and their respective institutions based on the research developed during the internship.

4. Applications and funding

IAI will issue a yearly call for proposals and intends to select, in consultation with CPTEC, 3 to 6 proposals per year for 6 months of internship including travel and living expenses. CPTEC will provide computer time, office facilities and low cost accommodation for the duration of the internship. Candidates will be required to submit a research proposal to IAI, curriculum vitae and 2 letters of recommendation, one of which from his/her employer. Selected candidates will produce a mid term report and a final report.

5. Budget

The table below indicates the cost of the internship to be financed by IAI and by CPTEC for 6 individuals.

Supercomputer time has been allocated as 180 hours at a 25% of the nominal cost.

Advisor time includes technical and scientific support by CPTEC personnel for a total of 8 hours per week. The office facilities including Internet access are not quoted but are implicitly included in the CPTEC cost. A notebook has been added to provide a local access to the CPTEC network and to provide the candidates an additional motivation for enrollment in the program.

<i>Cost per person for 6 months internship</i>		<i>US\$</i>
IAI	<i>Travel</i>	1,000
	<i>Living</i>	3,000
	<i>Notebook</i>	2,000
Total IAI		6,000
CPTEC	<i>Accommodation</i>	1,200
	<i>Computer time</i>	15,000
	<i>Advisor time</i>	4,000
Total CPTEC		20,200
Total (per person)		26,200
# persons/year		6
Total IAI		24,000
Total CPTEC		121,200
Total		157,200