

FORMULARIO "A": Descripción Financiera

I. GENERAL INFORMATION

Acronym of the proposal	PEPS - CHILE		
Title of the proposal in French	Physique des mécanismes de Tremblements de Terre de la Subduction Andina au Chili		
Title of the proposal in English	Physics of the Earthquakes processes on the Andean Subduction in Chile		
French Coordinator	Jean-Pierre VILOTTE		
Principal Researcher in Chile	Jaime CAMPOS		
*Theme (principal)	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5		
Type of research	<input checked="" type="checkbox"/> Basic Research <input type="checkbox"/> Industrial Research <input type="checkbox"/> Experimental Development		
International Cooperation	Agency : CONICYT Country : CHILE		
Total requested funding	282,050 €	Project Duration	_36_ months

*1: Physics ; 2: Mathematics ; 3: Sciences and Technologies for Information and Communication; 4: Engineering Science ; 5: Alimentation, Agriculture


I.1. GENERAL FUNDING REQUEST SUMMARY

	PARTNER	TOTAL COST (€)	FUNDING REQUEST (€)
Partner 1 (coordinator)	DGF, U. de Chile	362,050	282,050
Partner 2			
Partner 3			
Partner 4			
Partner 5			
Partner 6			
Partner 7			
Partner 8			
Partner 9			
Partner 10			
TOTAL		362,050	282,050

I.2. CHILEAN FUNDING REQUEST SUMMARY

BUDGET ITEMS	Thousand (€)			
	Year 1	Year 2	Year 3	Total
Staff	64,000	64,000	64,000	192,000
Travel	8,900	8,900	11,100	28,900
Operational Expenses	22,950	20,100	18,100	61,150
Equipment				
Annual Total	95,850	93,000	93,200	282,050

II. PRINCIPAL INVESTIGATOR CHILEAN

CAMPOS	MUÑOZ	JAIME ARTURO	8.869.720-0
FATHER'S SURNAME	MOTHER'S MAIDEN SURNAME	NAMES	RUT NUMBER
BLANCO ENCALADA 2002, SANTIAGO, CHILE			
MAILING ADDRESS			
SANTIAGO	CASILLA 2777	978 4306	696 8686
CITY	P.O. BOX	TELEPHONE	FAX
jaime@dgf.uchile.cl			
E-MAIL ADDRESS			
DEPTO. GEOFÍSICA, FACULTAD DE CIENCIAS FÍSICAS Y MATEMÁTICAS, UNIVERSIDAD DE CHILE			
INSTITUTION			PRINCIPAL INVESTIGATOR SIGNATURE

III. CHILEANS SPONSORING INSTITUTION(S): Performing Unit(s)

INSTITUTION NAME (University/Faculty/Department)		Institutional Representative Signature
1	UNIVERSIDAD DE CHILE / FAC. CS. FIS. Y MAT. / DEPTO GEOFÍSICA (International Earthquake Research Centre MB)	
2		
3		
4		

IV. ADDITIONAL FUNDING COMMITTED FROM OTHER INSTITUTIONS/SOURCES. If applicable, indicate the amount contributed by other institutions/enterprises interested in the proposal results. Please attach certifying letters.

INSTITUTION(S)	CONTRIBUTION (€)
DEPTO. DE GEOFISICA, UNIVERSIDAD DE CHILE MILLENNIUM NUCLEOUS : INTERNATIONAL EARTHQUAKE RESEARCH CENTER (ICM) MIDEPLAN MINISTER	80,000
TOTAL	80,000

V. COINVESTIGATORS (CHILEANS AND FRENCHS)

Use an asterisk (*) to identify the Co-Investigator who would act as Principal Investigator (PI) in case of a temporary absence of the latter.

	RUT / ID Number	FATHER'S SURNAME	MOTHER'S MAIDEN SURNAME	NAMES
*	8.869.720-0	CAMPOS	MUÑOZ	JAIME ARTURO
	Institution Name	Universidad de Chile		
*		BARRIENTOS	PARRA	SERGIO
	Institution Name	Universidad de Chile		
		VARGAS	EASTON	GABRIEL
	Institution Name	Universidad de Chile		
		VILOTTE		JEAN-PIERRE
	Institution Name	IPG Paris, France		
		VIGNY		CHRISTOPHE
	Institution Name	ENS Paris, France		
		MADARIAGA	MESA	RAUL
	Institution Name	ENS Paris, France		
		SOCQUET		ANNE
	Institution Name	IPG Paris, France		
		CISTERNAS	SILVA	ARMANDO
	Institution Name	Universidad de Chile		
		REBOLLEDO	LEMUS	SOFÍA
	Institution Name	Universidad de Chile		
		SEPULVEDA		SERGIO
	Institution Name	Universidad de Chile		

	GONZALEZ		GABRIEL
Institution Name	Universidad Católica del Norte, Chile		
	BATAILLE		KLAUS
Institution Name	Universidad de Concepción, Chile		
	PALACIOS	MONASTERIO	CARLOS
Institution Name	Universidad de Chile		
	THIELE	CARTAGENA	RICARDO
Institution Name	Universidad de Chile		
	FONCEA		CLAUDIO
Institution Name	Universidad de Chile		
	GONZALEZ		LENART
Institution Name	Universidad de Chile		
	ASTROZA		MAXIMILIANO
Institution Name	Universidad de Chile		
	LEYTON		FELIPE
Institution Name	Universidad de Chile		
	KAUSEL	VECHIOLLA	EDGAR
Institution Name	Universidad de Chile		
	RAULD	PLOTT	RODRIGO
Institution Name	Universidad de Chile		
	SEREY		ALEJANDRA
Institution Name	Universidad de Chile		
	PEREZ	SANDOVAL	ADRIANA
Institution Name	Universidad de Chile		
	RUIZ		SERGIO
Institution Name	Universidad de Chile		
	MENESES		GIANINA
Institution Name	Universidad de Chile		
	NAQUIRA		VERONICA
Institution Name	Universidad de Chile		

	SILVA		NATALIA
Institution Name	Universidad de Chile		

VI. AMOUNTS AND JUSTIFICATION OF FUNDS REQUESTED FROM CONICYT

VI.1 FUNDS FOR EACH PERFORMING UNIT. (Please use one sheet for each University Department).

UNIVERSIDAD DE CHILE / FACULTAD DE CIENCIAS FISICAS Y MATEMATICAS / DEPTO. GEOFISICA			
INSTITUTION (University/Faculty/Department)			
Blanco Encalada 2002, Santiago, Chile			
MAILING ADDRESS		INSTITUTION TAX ID	
	SANTIAGO	696 6563	696 8686
P.O. BOX	CITY	TELEPHONE	FAX
jaime@dgf.uchile.cl			
E-MAIL ADDRESS			
NAME OF INSTITUTIONAL REPRESENTATIVE		<div style="border: 1px solid black; height: 100px; width: 100%;"></div>	
Daniel Wolff			
<p>The above named Institutional Representative certifies to know the terms and regulations of this CONICYT competition and proposal selection procedures</p>			
		INSTITUTIONAL REPRESENTATIVE SIGNATURE	

BUDGET ITEMS	ANNUAL AMOUNTS (€)			
	Year 1	Year 2	Year 3	TOTAL
1. STAFF	64,000	64,000	64,000	192,000
2. PROPOSAL TRAVEL				
International Per Diem	4,000	4,000	4,200	12,200
International Fares	4,000	4,000	6,000	14,000
Domestic Per Diem	600	600	600	1,800
Domestic Fares	300	300	300	900
Total Travel	8,900	8,900	11,100	28,900
3. OPERATIONAL EXPENSES	22,950	20,100	18,100	61,150
4. EQUIPMENT				
TOTAL REQUESTED (1+2+3+4)	95,850	93,000	93,200	282,050

VI.2 HONORARIA REQUESTED FOR EACH PERFORMING UNIT RESEARCH STAFF. Please read Application Instructions. (Include data for all researchers, even if no honoraria are being requested).

UNIVERSIDAD DE CHILE / FACULTAD DE CIENCIAS FISICAS Y MATEMATICAS / DEPTO. GEOFISICA						
RESEARCH UNIT (INSTITUTION / UNIVERSITY/ FACULTY/ DEPARTMENT)			ANNUAL AMOUNTS (€)			
ROLE	RUT number	FULL NAME	Year 1	Year 2	Year 3	TOTAL
PI Chilean	8.869.720-0	Jaime Campos				
CoInvestigator		Gabriel Vargas				
CoInvestigator		Sergio Barrientos				
CoInvestigator						
(2 MSc) Thesis/Doctoral Students			12.000	12.000	12.000	36.000
(1 Computer specialist / 1 GPS expert / 1 Seismic technician) Technical & Support Staff			40.000	40.000	40.000	120.000
SUB-TOTAL HONORARIA (€)			52.000	52.000	52.000	156.000

RESEARCH UNIT (INSTITUTION / UNIVERSITY/ FACULTY/ DEPARTMENT)			ANNUAL AMOUNTS (€)			
ROLE	RUT number	FULL NAME	Year 1	Year 2	Year 3	TOTAL
CoInvestigator		Klaus Bataille				
CoInvestigator						
(1 MSc) Thesis Students			6.000	6.000	6.000	18.000
(Technical Support)						
SUB-TOTAL HONORARIA (€)			6.000	6.000	6.000	18.000

RESEARCH UNIT (INSTITUTION / UNIVERSITY/ FACULTY/ DEPARTMENT)			ANNUAL AMOUNTS (€)			
ROLE	RUT number	FULL NAME	Year 1	Year 2	Year 3	TOTAL
CoInvestigator		Gabriel Gonzalez				
CoInvestigator						
(1 MSc) Thesis Students			6.000	6.000	6.000	18.000
Technical & Support Staff						
SUB-TOTAL HONORARIA (€)			6.000	6.000	6.000	18.000

PRIVATE (Include here staff personnel not affiliated with an institution/ organization).			ANNUAL AMOUNTS (€)			
ROLE	RUT number	FULL NAME	Year 1	Year 2	Year 3	TOTAL
CoInvestigator						
CoInvestigator						
TOTAL PERSONNEL (€)						

VI.3. JUSTIFICATION OF REQUESTED AMOUNTS: Justify the annual amounts requested for each of the items above.

1. STAFF

- 1.a. If applicable, fully describe the tasks of all **technical & support staff** for which honoraria are being requested. Make sure their inclusion is directly related to the proposed goals and work plan of the research.

A massive amount of data has been collected in the past few years in both seismic and GPS observational devices installed by ANR-French and Millenium / University of Chile in collaboration with Universidad Catolica del Norte and Universidad de Concepción.

In order to efficiently exploit scientifically these data, it is essential to built up a high quality data base and appropriate ways to access it. In this mannere, the scientists will concentrate on the reserach aspects of the work not spending time solving software matters as has been the case at present.

At present there are of the order of 10 TB of GPS and seismological data and metadata (waveform, parametric, etc).

During the period of the project, we need:

- (a) 1 computer specialist;
- (b) 1 GPS expert
- (c) 1 seismic technician.

Year 1:.....€ 40.000

Year 2:.....€ 40.000

Year 3:.....€ 40.000

- 1.b. Clearly specify if this proposal intends to fund **theses students/Doctoral students**. For theses students, include the names of prospective candidates, possible topics and degree objective. For Doctoral students, indicate the name of the program.

Sergio Ruiz, Rodrigo Rauld are PhD students already are carrying out research in some aspects complementary to this project.

Sergui Ruiz is studying the dynamic aspect of the seismic source of Tocopilla earthquake. Rodrigo Rauld is finalizing his thesis on tectonics of San Ramon fault system in Central Chile.

Funds for the four MSc thesis asked for in this proposal include research in: paleoseismolgy (very important to understand the seismic behavior of tectonic problems in subduction environments); GPS is an essential tool for crustal deformation related to earthquake occurrence; finally the seismic hazard studies in andean subduction environment is the last topics of MSc thesis.

We ask funds for:

- 1 MSc Thesis in paleoseismology
- 2 MSc Thesis in deformation methods using GPS data
- 1 MSc Thesis in seismic hazard studies

Total amount: € 72.000 for 3 years

2. **PROPOSAL TRAVEL:** Funding may be requested for activities directly related to the proposal development and dissemination of results.

FOREIGN TRAVEL: Indicate tentative destinations, number of days and amounts for each trip. Estimate annual international travel fares and per diem expenses. **Only economic tariffs are acceptable.**

	AMOUNTS (€)		Purpose	N° Days
	Fares	Per Diem		
Year 1	2 tickes Stgo-Paris-Stgo (€ 2.000 x 2)	€ 2.000 x 2 (10 days x 2)	Coordination and scientific exchanges.	10
Year 2	2 tickes Stgo-Paris-Stgo (€ 2.000 x 2)	€ 2.000 x 2 (10 days x 2)	Coordination and scientific exchanges.	10
Year 3	3 tickes Stgo-Sn Francisco-Stgo (€ 2.000 x 3)	€ 1.400 x 3 (7 days x 3)	Presentation in AGU scientific meeting in Sn Francisco, USA. It is expected that 3 students will presents their findings in this meeting.	7

Justification (for each year):

In order to coordinate the scientific work on all different aspects of this proposal it is essential to have

continuous discussion because new data are being acquired in complementary fields of science. The different interpretations that can follow from this multidisciplinary approach must be confronted in a personal manner to allow a consensual point of view of this complex topics related to understand the earthquake process.

Total Funds:

€ 8.000 year 1

€ 8.000 year 2

€ 10.200 year 3

DOMESTIC TRAVEL & FIELD TRIPS: Per Diem expenses related to domestics field trips must be justified. Provide a detailed schedule including transportation means to be used. Include a tentative calendar of national scientific meetings you plan to attend.

	AMOUNTS (€)		Purpose	N°. Days
	Fares	Per Diem		
Year 1	€ 300 2 tickes: (1 Antof.-Stgo-Antof.; 1 Concep.-Stgo-Concep.)	€ 600	Coordination and scientific discussion in Santiago with national partenrs	3 days each
Year 2	€ 300 2 tickes: (1 Antof.-Stgo-Antof.; 1 Concep.-Stgo-Concep.)	€ 600	Coordination and scientific discussion in Santiago with national partenrs	3 days each
Year 3	€ 300 2 tickes: (1 Antof.-Stgo-Antof.; 1 Concep.-Stgo-Concep.)	€ 600	Coordination and scientific discussion in Santiago with national partenrs	3 days each

Justification (for each year):

Coordination and scientific discussion in Santiago with national partners.

3. OPERATIONAL EXPENSES: Specify and justify, for each proposal year the amounts requested, if applicable, for the following items: computing-related items, reagents and other laboratory non-durable materials, field trip related expenses (vehicle rental, shipping charges, gasoline, lubricants, highway tolls), books purchases, scientific journals and subscription fees (all of which must be registered with the performing unit), scientific meetings registration fees, payments for services, hiring of occasional auxiliary personnel, publishing costs of proposal-derived papers on ISI-indexed journals or equivalent depending on the nature of the field.

(a) We consider field work and maintenance of seismological and GPS stations .

3 trip/year x 2 people (vehicle rental, shipping charges, gasoline, lubricants): **€ 4,500 / year**

(b) Aysén / Mejillones field work (paleoseismology-tectonics):

Considera días de barco con una lancha para realizar exploraciones con 3.5 kHz, y <5 días de un barco grande para extraer testigos largos de gravedad.

Considera análisis de estratigrafía y geocronología de testigos, básicos para la determinación de estructuras asociadas a paleoterremotos. Considera también envío de material y equipos.

Considera pasajes y viáticos para la realización de las campañas, de un geólogo y ayudante(s).

Considera 2 tesis de magister durante un período de tres años.

	Año 1	Año 2	Año 3
	€	€	€
Días- Barco (3.5 kHz y testigos)	9350	8500	2700
Materiales y análisis	2500	3800	7600
Pasajes y viáticos	6600	3300	3300
TOTAL	18450	15600	13600

4. EQUIPMENT FOR EACH PERFORMING UNIT.

Indicate the quantity and cost of each piece of equipment being requested. This amount(s) specified must include transportation, insurance and applicable import taxes costs. Non-durable, expendable items, must be included under Operational Expenses. Include, if deemed relevant, one quotation / proforma invoice. **No equipment purchase is allowed during the last execution year.**

a. **Equipment specifications**

RESEARCH UNIT (INSTITUTION / UNIVERSITY/ FACULTY/ DEPARTMENT)								
	Amounts (€)							
	Year 1		Year 2		Year 3		TOTAL	
ITEM	Qty.	(€)	Qty.	(€)	Qty.	(€)	Qty.	(€)
TOTAL								

RESEARCH UNIT (INSTITUTION / UNIVERSITY/ FACULTY/ DEPARTMENT)								
	Amounts (€)							
	Year 1		Year 2		Year 3		TOTAL	
ITEM	Qty.	(€)	Qty.	(€)	Qty.	(€)	Qty.	(€)
TOTAL								

- b. **EQUIPMENT JUSTIFICATION:** Each piece of equipment requested must be clearly justified considering the proposal goals and intended work plan. Purchase of furniture or upgrading of physical spaces for the proper execution of the project is allowed.