

Application form mySNF

Instrument **FORCE (Division II)**

Part 1: General Information

Basic data

Project Title Maintenance and Operation 2010 for the LHC experiments at CERN
Project title in English Maintenance and Operation 2010 for the LHC experiments at CERN

Research Field Mathematics, natural sciences
Main Discipline 20403 Particle Physics
University or college Universität Zürich - ZH

Applicant(s)

Main Applicant **Ulrich Straumann**
Other Applicant(s) Olivier Schneider
 Allan Clark
 Aurelio Bay
 Felicitas Pauss
 Günther Dissertori
 Antonio Ereditato
 Tatsuya Nakada
 Claude Amsler
 Alain Blondel
 Martin Pohl

Grant Application

Amount requested (CHF) Total **1'070'000**

Related to project no. 206620_125293
 Continuation foreseen Yes
 Requested starting date **01.04.2010**
 Duration (months) **12**

Attachments

Research plan SciencePart_prov.pdf
 Curriculum vitae CV_Publist_Straumann.pdf
 CV_Publist_Schneider.pdf
 CV_Publist_Nakada.pdf
 CV_Publist_Blondel1.pdf
 CV_Publist_Pohl.pdf
 CV_Clark.pdf
 CV_Bay.pdf
 CV_Dissertori.pdf
 CV_Ereditato_short.pdf
 CV_Amsler.pdf
 Publication List Pub_09.pdf
 CV_Publist_Schneider.pdf
 CV_Publist_Nakada.pdf
 CV_Publist_Blondel1.pdf

CV_Publist_Pohl.pdf
Publist_Clark_2009.pdf
Publist_Bay.pdf
Publist_Dissertori_2009.pdf
Publist_Ereditato_2009.pdf
Publist_CAmpler.pdf

Documents sent by surface mail

1. Responsible applicant

Surname	Straumann
First name	Ulrich
Function (title)	Professor
Academic degree	Prof.
Date of birth	22.06.1953
Gender	männlich
Civil Status	verheiratet
Correspondence language	Deutsch
Nationality	Schweiz
Correspondence address of application	Address of workplace

Direct Address

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Country	Schweiz

Address of institute

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Continuation 1 (e.g. inst / dept.)	Physik-Institut
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Communication

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2. Other applicant(s)

General information

Surname	Schneider
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Function (title)	PhD
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Date of birth	21.05.1961
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Address of institute

Name of Institution 1 (e.g. laboratory)	Laboratoire de Physique
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General information

Surname	Clark
First name	Allan
Function (title)	Professor
Academic degree	Dr.
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Gender	male
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Address of institute

Name of Institution 1 (e.g. laboratory)	S�ction de physique
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General information

Surname	Bay
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Academic degree	Dr.
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Address of institute

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General information

Surname	Pauss
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Gender	female
Civil Status	Unknown
Correspondence language	German
Nationality	Austria
Address(es)	Enter my own working address

Address of institute

Name of Institution 1 (e.g. laboratory)	Laboratory for High Energy Physics
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Street, No.	Schafmattstr. 20
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General information

Surname	Dissertori
First name	Günther
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Address of institute

Name of Institution 1 (e.g. laboratory)	Laboratory for High Energy Physics
Continuation 1 (e.g. inst /dept.)	Institute for Particle Physics

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General information

Surname	Ereditato
First name	Antonio
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Academic degree	Dr.
Date of birth	02.06.1955
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Address of institute

Name of Institution 1 (e.g. laboratory)	Laboratorium für Hochenergiephysik (LHEP)
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Cellphone	
Website	

E-mail

General information

Surname	Nakada
First name	Tatsuya
Function (title)	Professor
Academic degree	Dr.
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Gender	male
Civil Status	Unknown
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Address of institute

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Country	Switzerland

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General information

Surname	Amsler
First name	Claude
Function (title)	Professor
Academic degree	Dr.
Date of birth	21.07.1947
Gender	male
Civil Status	Married
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Nationality	Switzerland
Address(es)	Enter my own working address

Address of institute

Name of Institution 1 (e.g. laboratory)	Physik-Institut
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Continuation 2 (e.g.	

University)	
Street, No.	Winterthurerstr. 190
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Country	Switzerland

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General information

Surname	Blondel
First name	Alain
Function (title)	Professor
Academic degree	Dr.
Date of birth	26.03.1953
Gender	male
Civil Status	Unknown
Correspondence language	French
Nationality	France
Address(es)	Enter my own working address

Address of institute

Name of Institution 1 (e.g. laboratory)	DPNC
Continuation 1 (e.g. inst /dept.)	Section de Physique
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Address supplement (e.g. office)	
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Country	Switzerland

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Direct line	+41 22 379 62 27
Fax office	+41 22 379 69 92
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Cellphone	
Website	
E-mail	alain.blondel@cern.ch

General information

Surname	Pohl
First name	Martin
Function (title)	Professor
Academic degree	Dr.
Date of birth	18.09.1951
Gender	male
Civil Status	Unknown
Correspondence language	German
Nationality	Germany
Address(es)	Enter my own working address

Address of institute

Name of Institution 1 (e.g. laboratory)	Institut of Physics
Continuation 1 (e.g. inst /dept.)	University of Geneva
Continuation 2 (e.g. University)	
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3. Basic data I

Original project title	Maintenance and Operation 2010 for the LHC experiments at CERN
Project title in English	Maintenance and Operation 2010 for the LHC experiments at CERN
Requested starting date	01.04.2010
Duration (months)	12
Research field	Mathematics, natural sciences
Main discipline	20403 Particle Physics

4. Basic data II

Summary

The new large hadron collider (LHC) at CERN will now start its operation in November 2009, initially colliding protons with a centre of mass energy of 7 TeV. Over the last 13 months, the repair and consolidation of the LHC has been carried out with great care.

In an enormous effort over more than 15 years the world-wide particle physicist community has designed, developed, constructed and installed four detectors, in order to exploit the physics at the TeV scale, which will shed light on the nature of electro-weak symmetry breaking and where supersymmetric particles or extra spacial dimensions may be discovered. Switzerland significantly contributed to three of those experiments.

The experiments, designed to measure the reaction products at the interaction regions of LHC, are also supported by CERN in its role as the host laboratory of the LHC accelerator. However, CERN requests the institutes and funding agencies involved in the detector investments

a) to contribute to the daily running and maintenance expenses, and
 b) to provide the necessary scientific and technical manpower to ensure operations and the good working order of the elements and sub-detectors they have provided for the whole lifetime of the experiment of about 10 years. The distribution of these costs (a and b above) among the institutes is proportional to their participation and decided at the Ressources Review Board RRB of 12-14 October 2009, where all institutes and funding agencies are present.

This FORCE request is coordinated by CHIPP (Swiss Institute for Particle Physics) and is a common request from of all institutes active in the LHC detector construction and operation. It summarises the Swiss contributions to the three LHC detector's design, construction, commissioning and operation. It explains CERN's concept of maintenance and operation (including funding mechanisms) and gives an overview of the costs for 2010, which Switzerland is supposed to cover (according to the RRB agreement).

Keywords

LHC Experiments
ATLAS
Higgs
Supersymmetry
CP Violation
new physics
standard model
CMS
LHCb
German
Finanzabteilung der Universität Zürich

Language of correspondence

Financial administration

5. Continuation of

Application	206620_125293 22: Maintenance and Operation for the LHC experiments at CERN
Remarks	Follow-on proposal
Continuation foreseen?	Yes

6. Indirectly related to other research projects

Application	206620_125551 23: FORCE: Construction of the LHCb experiment
Type of relationship	same scientific purpose - CERN LHC detectors
Application	206620_124439 6: FORCE – GRID Infrastructure for LHC Experiments
Type of relationship	same scientific purpose - CERN LHC detectors
Application	124379
Type of relationship	same scientific purpose - CERN LHC detectors
Application	125035
Type of relationship	same scientific purpose - CERN LHC detectors
Application	124583
Type of relationship	same scientific purpose - CERN LHC detectors
Application	121768
Type of relationship	same scientific purpose - CERN LHC detectors
Application	121949
Type of relationship	same scientific purpose - CERN LHC detectors

7. University and institutional statement

University or college	Universität Zürich - ZH
Remarks	
Institutional declaration (FC)	Forschungskommission ZH
Remarks	

8. Collaboration (national and international)

Research group/institution	400 institutions from all over the world
Country	Switzerland
Context	- CERN - Universities of Berne, Geneva, Zurich, ETHZ, EPFL, PSI (coordinated by CHIPP)

9. Available or requested funds

<p>Do you have access to, or have applied for additional funds?</p>	Yes
<p>Personnel and staff available</p>	none
<p>Available equipment</p>	none
<p>Amount allocated for apparatus, consumables, travelling expenses and other expenditure</p>	<p>2010:</p> <p>ATLAS:</p> <p>Cat. A: 153 kCHF</p> <p>Cat. B: Silicon strip tracking (SCT) 45 kCHF</p> <p>Cat. B: Liq. Argon Calo. (LAr) 7 kCHF</p> <p>Cat. B: Inner detector (IDGEN) 39 kCHF</p> <p>sub-total ATLAS: 244'000 CHF</p> <p>CMS:</p> <p>Cat. A: 311 kCHF</p> <p>Cat. B: Pixel tracking 159 kCHF</p> <p>Cat. B: E.m. calorimeter (ECAL) 131 kCHF</p> <p>sub-total CMS: 601'000 CHF</p> <p>LHCb:</p> <p>Cat. A: 133 kCHF</p> <p>Cat. B: Vertex locator (VELO) 5 kCHF</p> <p>Cat. B: Silicon tracking (ST) 43 kCHF</p> <p>sub-total LHCb 181'000 CHF</p> <p>Total 1'026'000 CHF</p> <p>This table is provisional represents the total Swiss share of the 2010 preliminary M&O costs estimated in spring 2009 by CERN and the collaborations (see the scientific section for explanations).</p>
<p>Infrastructure Support requested from other sources</p>	<p>none</p> <p>- other detector projects and GRID infrastructure see section 6 above</p> <p>- in the context of its "Projektgebundene Beiträge", the SUK - seconded by the ETH - has approved the project "Swiss Centre for Advanced Studies in Particle Physics in the LHC Era", submitted by the CHIPP (Swiss Institute for Particle Physics), and granted CHIPP funding to allow the hiring of excellent PostDocs for LHC data exploitation for the period 2008-2011. Up to now, 9 PostDocs have been selected in international competition and are working at the five institutes concerned (Universities of Bern, Geneva and Zurich, EPFL, ETHZ).</p>

10. Requested positions, salaries and social security contributions

Overview positions (full time equivalents)

Allotment	Total %	Year 1
Academics		
Doctoral students		
Technician		
Assistant		
Total %	0	0

Details

Last name	Nationality	Academic degree	Function	Salary class	Salary others, 1st year	Salary SNF, 1st year
First name	Gender	Since	Employment as a percentage (%)	Since	2nd year	2nd year
Date of birth	Number of children	Doctoral cand. since	Paid by SNF	Type of position	3rd year	3rd year
Subprojekt					4th year	4th year
					5th year	5th year

Total positions CHF

Allotment	
Academics	
Doctoral students	
Technician	
Assistant	
Total CHF	

11. Requested Funding

Budget per year (overview)

Project

Allotment	Total SNSF (CHF)	Year 1
Scientific equipment and components		
Other costs	1'070'000	1'070'000
Salaries		
Social security contributions		
Total SNSF (CHF)	1'070'000	1'070'000
Total SNSF (CHF)	1'070'000	1'070'000

Budget per year (detail)

Values in brackets represent items requested from other sources than SNF

No subprojects

	Total SNSF (CHF)	Year 1
Project		
Other costs		
Consumables & Maintenance (according to the RRB decision of October 2009)	1'070'000	1'070'000
Total SNSF (CHF)	1'070'000	1'070'000

12. General remarks to the project

Abbreviated designation	LHC experiments M & O 2010
Communication	<ol style="list-style-type: none"> 1. The scientific part has been added to the request on 28 October. 2. The numbers in items 9 and 11 are final and based on the decision of the RRB (12-14 October).
Confidential	No