

Election of two Executive Board members for 2017–2018

Introduction

The CHIPP Executive Board (EB) is composed of up to four individuals: the Chair and one to three Vice-Chairs (Statutes Article 28.2). Their term of office is two years and renewable (Statutes Article 28.3). The members of the CHIPP EB are elected by the Board (Article 27, litt. e of the Statutes).

The present composition of the CHIPP EB is the following:

- Tatsuya Nakada (EPFL, Chair), 3rd term until Dec 2017
- Teresa Montaruli (Uni. GE, Vice-Chair), 2nd term until Dec 2016
- Adrian Signer (PSI, Vice-Chair), 1st term until Dec 2016
- Günther Dissertori (ETHZ, Vice-Chair), 1st term until Dec 2017

Proposal

The following two members will finish their current mandate at the end of this year:

- Teresa Montaruli, who wishes to step down at the end of her 2nd term;
- Adrian Signer, who is ready to serve for a 2nd term and hence to stand for re-election.

It is certainly advantageous to have a fair representation in the EB of the diversity of CHIPP and experience over the past years has shown that it is beneficial to have all four positions filled. The Board should therefore elect in 2016 two EB members for the period 2017–2018.

The call for nominations among the CHIPP Board members for the succession of Teresa Montaruli resulted in three new candidates for the CHIPP EB, among which one was not standing for election. The two others, Michele Weber (Uni. BE) and Xin Wu (Uni. GE), are both ready to serve in the EB. The CVs of the two candidates followed by a short statement are attached below.

The Board (applying Article 27, litt. e of the Statutes) is invited

- **to re-elect** Adrian Signer for a 2nd EB term from January 2017 to December 2018
- **to elect** Michele Weber or Xin Wu for a 1st EB term from January 2017 to December 2018

Required majority: simple

November 21st 1971, married, three children.

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Education and Career

1995 – 1997 Diploma in Physics (lic.phil.-nat), thesis on a Quartz-Fiber Lead Electromagnetic Calorimeter (in German), University of Bern (May 1997).

1997 – 2001 PhD student and teaching at the University of Bern, Switzerland. Research: Heavy ion physics (NA52 experiment), strangelet search and (anti)particle production in Pb-Pb collision. Electromagnetic and hadronic calorimeters, time-of-flight, scintillation counters, data acquisition and analysis. Doctor of philosophy and science (Dr. phil.-nat.), **PhD thesis** on “Strangelet Searches in Pb + Pb Collisions at $158 \cdot A \text{ GeV}/c$ ”, University of Bern (April 2001). Advisor Prof. Dr. K. Pretzl.

2001 – 2002 Post-Doc and teaching at the University of Bern, Switzerland. Research: Long baseline neutrino oscillation physics with the OPERA collaboration. Scintillator target tracker. Automated emulsion scanning microscopes.

2002 – 2007 Research associate at the Fermi National Accelerator Laboratory, USA. Research: High energy collider physics with the D0 Collaboration at the Tevatron collider. Top quark physics. Silicon detectors.

2007–2010 Oberassistent at LHEP, University of Bern, Switzerland. Research: High energy collider physics with the ATLAS experiment at the LHC and D0 at Fermilab. Detector development for particle physics. Privatdozent (PD) degree, **Habilitation** thesis on “Advances in Top Quark Physics”. University of Bern (June 2009).

2010– Tenured position at LHEP, University of Bern, Switzerland; associate Professor since 2013 and deputy director. Research: High energy collider physics at the LHC. Detector R&D for particle physics, pixel silicon detector and liquid Argon TPC development. Neutrino physics at the Fermi National Accelerator Lab, USA.

2014 Six months visiting scientist at the Fermi National Accelerator Laboratory, USA. MicroBooNE physics coordination.

Work and research experience

I am professor and deputy director at the Laboratory for High Energy Physics of the University of Bern. My main scientific interests are Collider Physics and the physics of neutrinos. During my career I have **designed, built and operated detectors using all major techniques common in particle physics**. I also have a great experience in data analysis, including the application of most modern analysis techniques both to precision measurements and searches for new physics. I held several high level management positions in scientific collaborations. I consider it important to work on a mix of hands-on hardware activity and data analysis as well as combining the information and knowledge of multiple fields to achieve advances in fundamental physics. I do value outreach by organizing events and giving lectures and talks for the general public, high school students or teachers.

Selected achievements / responsibilities

- Physics Coordinator of MicroBooNE (2013–). Science lead of the collaboration setting up the physics results and publication preparation procedures and obtaining first results on beam data. Also serving on speakers committees of MicroBooNE and SBND.
- Liquid Argon TPCs development: co-initiated the development of a modular next generation detector technology (ArgonCUBE), installed UV calibration system in MicroBooNE, established in-situ HV generation with a Greinacher circuit, achieved the worldwide highest voltage and longest drift distance to date of 4.8m in liquid argon (ARGONTUBE, 2014).

- Coordinator of the ATLAS activities in Bern (2009–) with a group of several Post.-Docs and PhD students. Deputy National Contact Physicist for Switzerland in ATLAS. **Search for physics beyond the Standard Model**, published limits on the existence of supersymmetric particles. Used multivariate techniques for the first time in ATLAS for SUSY searches.
- Initiated the pixel detector development activity in Bern. Upgraded the ATLAS Pixel detector Layer 1 and Layer 2 readout to overcome bandwidth limitations (ATLAS “Phase-I” upgrades).
- Installed a new layer (IBL) of pixel sensors in ATLAS (2014), and implemented its optical readout.
- Discovery of the Standard Model **Higgs boson** (July 2012) with the ATLAS experiment.
- **Top quark physics group leader** (2006-2007) on DZero, leading the top physics group, delivering main legacy results of the Tevatron RunII project. Evidence for electroweak production of top quarks (“single-top”) (first extensive use of multi-variate techniques in collider physics) and a first direct measurement of the $|V_{tb}|$ element of the CKM matrix. **Performed a precise measurement of the top quark mass** with the ideogram method.
- Installed Layer-0, a new innermost layer of silicon strip sensors, at the D0 experiment at Fermilab (2006).
- **Run coordinator** on DZero (2004-2005), with the responsibility for the operation and safety for one of the world largest and most complex particle physics experiments.
- **Silicon detector group leader** in DZero (2002-2004), responsibility over the newly installed silicon detector. Major improvements to the monitoring and operations, significantly reducing the failure rate and substantially reducing the dead time of the experiment.
- Member of the OPERA collaboration: installed a first automatic scanning microscope for emulsion in Bern.
- Member of NA52 as a graduate student. **Primary analyzer of the data**, published several conference proceedings and journal articles on the world best limits on strangelet searches and the measurement of (anti)-particle and (anti)-nuclei production cross sections (including anti-helium-3). **Designed and built an electro-magnetic calorimeter**, designed and installed new time of flight scintillators, maintained the time-of-flight system, hadronic calorimeter, Čerenkov detectors and wire chambers as well as the data acquisition, on-line software and triggering.

Selected Services

- CHIPP auditor (2016-2018).
- CHIPP representative in the CERN users committee (2008–2014), member of the CERN scientific information policy board (2008–2014).
- CHIPP representative in the plenary ECFA (2008-2012).
- Programm committee member of the PSI Summer School 2016, “Exothiggs” in Zuz.
- Member of the Editorial Board of the New Journal of Physics (Jan 2013-).
- Referee for JHEP, New Journal of Physics, Phys. Rev. D, Phys. Rev. Lett.
- Referee for the Swiss National Science Foundation on career and research grants.
- Member of the Scientific Advisory Committee of the Albert Einstein Center, University of Bern.
- Head expert for physics at Matura exams in the Canton of Bern.
- Coordinating Mechanical and Electronics activities in Bern. Safety officer of the Physics Institute.

Statement

I have been involved in CHIPP activities since I was a PhD student, when it was the “Forum”, and I have represented CHIPP in P-ECFA and ACCU. This allows me to be sensitive to the needs and issues of colleagues at different career stages. As deputy director of the Laboratory for High Energy Physics in Bern I am active and fulfilling leading scientific and management roles in the collider and neutrino communities. As a member of the Board of the AEC I am also well acquainted with relations between theorists and experimentalists. In the next years, large infrastructures and related funding in several pillars (e.g. collider, neutrino and astro-particle) will continue to be a major topic and the role of CHIPP as coherent voice of the community in front of politics and the public will be a crucial. (In addition, of course, to the interaction with funding agencies and scientific bodies.) I believe to have a good understanding of the Swiss political system and scientific funding mechanisms and I am happy to fully commit myself to representing the neutrino and astro-particle communities in the EB. My main interests are promoting links between different disciplines; foster young generations and lead CHIPP towards the challenges of future large enterprises at large infrastructures. M. Weber, July 2016.

Curriculum Vitae

- PERSONAL INFO:** *Name:* Xin Wu *Date of birth:* 12.05.1963 *Nationality:* Swiss
- EDUCATION:** PhD, Massachusetts Institute of Technology, U.S.A, 1990
- POSITION:** **Associate Professor**, Department of Nuclear and Particle Physics, University of Geneva, Switzerland
- RESEARCH:** *Experimental Particle and Astroparticle Physics; Instrumentation for astroparticle and astrophysics space missions*
- Readout Electronics*
- Front-end readout controller of the calorimeter position detector the UA1 (CERN) experiment (1985-90)
 - Silicon tracker readout chips of the ATLAS (CERN) experiment (1991-95)
 - Track trigger electronics of the CDF (Fermilab) experiment (1996-2001)
- Trigger System*
- Trigger algorithm development for CDF exotic physics (2001-03)
 - ATLAS Calorimeter trigger software development (2005-07) and High Level Trigger algorithm integration (2006-07)
 - ATLAS overall trigger activity coordination (2007-09)
 - ATLAS Fast Tracker trigger upgrade project (since 2012)
- Detector and Space Mission Development*
- CERN RD-2 silicon tracker R&D (1991-95)
 - ATLAS silicon tracker (1996-2001)
 - Silicon Tungsten Tracker for the DAMPE mission, PL (since 2012)
 - PANGU gamma-ray space telescope proposal, Lead proposer (since 2014)
- PUBLICATION:** Co-authored more than 700 refereed journal papers
- TEACHING:** Bachelor, Master and Doctoral level courses (electronics, nuclear/particle physics, statistics, data analysis techniques); Supervise and co-supervise >10 PhD students
- LEADERSHIP:** *Lead independent research groups, coordinate activities in international collaborations and serve in many management/coordination positions*
- CDF Executive Board member and CDF-Geneva Group Leader (1996-2001)
 - ATLAS-Geneva Deputy Team Leader (since 2007)
 - ATLAS Calorimeter Trigger Software Coordinator (2005-07), High Level Trigger Algorithm Integration Coordinator (2006-07), ATLAS Deputy Trigger Coordinator (2007-09)
 - Swiss Delegate to European Committee on Future Accelerators (ECFA) (2006-2012)
 - DAMPE Silicon Tungsten Tracker (STK) Project Leader, DAMPE European PI (since 2012)
 - HERD mission proposal Tracker co-Coordinator (since 2014)
 - PANGU mission proposal Lead Proposer (since 2014)
 - Geneva Space Astroparticle Group Co-Leader (since 2015)
 - Liaison Member from the Swiss Institute of Particle Physics (CHIPP) to the Swiss Committee on Space Research (since 2015)
 - Member of the Swiss Committee on Space Research (CSR) (since 2016)
- FELLOWSHIP:** PROFIL II Fellow of the Swiss National Science Foundation (1996-2001)
Fellow of 'Bourse de Relève' of the Swiss Confederation (1998-2001)

CHIPP is a unique platform for the very active but decentralized particle physics community in Switzerland to exchange progress, results and future plans through regular plenary meetings, topical workshops and Ph.D schools. The particle physics community in Switzerland is large and diverse so CHIPP activities should strive to cover all the research projects pursued by Swiss institutes.

CHIPP allows different research groups working in similar topics to coordinate among themselves to produce coherent roadmaps of future developments. The community-wide coordination is important in presenting a global vision to the stakeholders, especially in the “bottom up” approach often claimed to be used by the funding agencies.