Swiss Institute of Particle Physics

an Association according to Swiss law

Welcome to the

2020 CHIPP Plenary Session

15 October 2020 via ZOOM

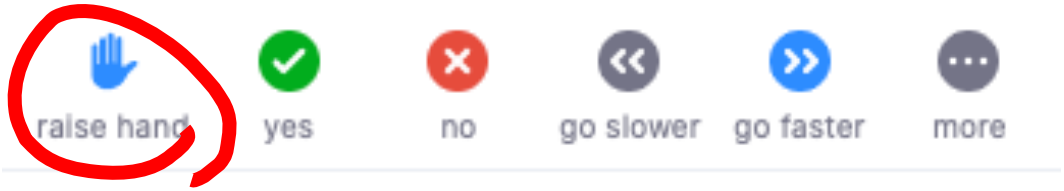
Swiss Institute of Particle Physics

AGENDA

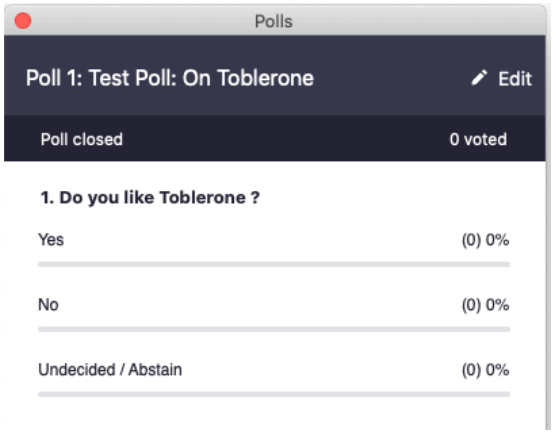
1.	**Welcome, news from CHIPP Board and Executive Board**	Rainer Wallny
2.	**Admission of new CHIPP Honorary Members**	Rainer Wallny
3.	**CHIPP Elections (ACCU)**	Rainer Wallny
4.	**Nuclear Physics European Collaboration Committee (NuPECC) report**	Berndt Krusche
5.	**CERN Council report**	L. Rivkin for G. Dissertori
6.	**CHIPP Prize talk**	Claudia Merlassino
7.	**Gravitational Waves talk**	Philippe Jetzer
8.	**CHIPP Elections (ACCU)**	Rainer Wallny
9.	**Advisory Committee of CERN Users (ACCU) report**	Bodhan Kotlinski
10.	**Computing CHIPP**	Mauro Donega
11.	**Astroparticle Physics European Consortium (APPEC) report**	Xin Wu
12.	**European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*) report**	Gilberto Colangelo
13.	**CHIPP Outreach report**	HansPeter Beck
14.	**European Committee for Future Accelerators (ECFA) report**	M. Seidel

Discussion and Electronic vote

- **<u>Discussion:</u> Please raise your hand and wait to be called by moderator**
  - Moderator: Malte Backhaus
  - You can also chat them in case there is a technical issue



- **<u>Elections:</u> We use the ZOOM polling system to collect votes and distribute the results**
  - Angela will register the outcomes for the minutes
  - Polls will not be anonymous unless you request it



Elections held at the Board:

EB members: Michele Weber (U. Bern), Gino Isidori (U. Zurich), Rainer Wallny (ETHZ), Anna Sfyrla (U. Geneva)

CHIPP auditor: Saverio Braccini (UniBe)

Education & Outreach coordinator: Katharina Müller (uniZH)

Swiss ECT* representative: Gilberto Colangelo (UniBe)

Swiss Representative in EPPCN: Angela Benelli (CHIPP)

Swiss observer to CHAPS: Rainer Wallny (CHIPP Chair)

<u>Recommendation for election at the Plenary Board:</u>

Sergio Gonzalez Sevilla as Swiss ACCU representative

Honorary member: T. Nakada (EPFL), A. Bay (EPFL), C. Grab (ETHZ), A. Ereditato (UniBe), B. Kotlinski (PSI)

CHIPP Executive Board

Composition in 2020:

- **Rainer Wallny** (ETHZ), elected for 2nd term until Dec 2021
  Chair elected for 1st term until Dec 2021
- **Michele Weber** (Uni. BE), 2st term until Dec 2020
- **Gino Isidori** (Uni. Zh), 1st term until Dec 2020
- **Anna Sfyrla** (Uni. Ge), elected 1st term until Dec 2021

Composition in 2021:

- **Rainer Wallny** (ETHZ), elected for 2nd term until Dec 2021
  Chair elected for 1st term until Dec 2021
- **Michele Weber** (Uni. BE), 3rd term until Dec 2022
- **Gino Isidori** (Uni. Zh), 2nd term until Dec 2022
- **Anna Sfyrla** (Uni. Ge), elected 1st term until Dec 2021

Swiss Institute of Particle Physics

Since the last Plenary

Thank you !

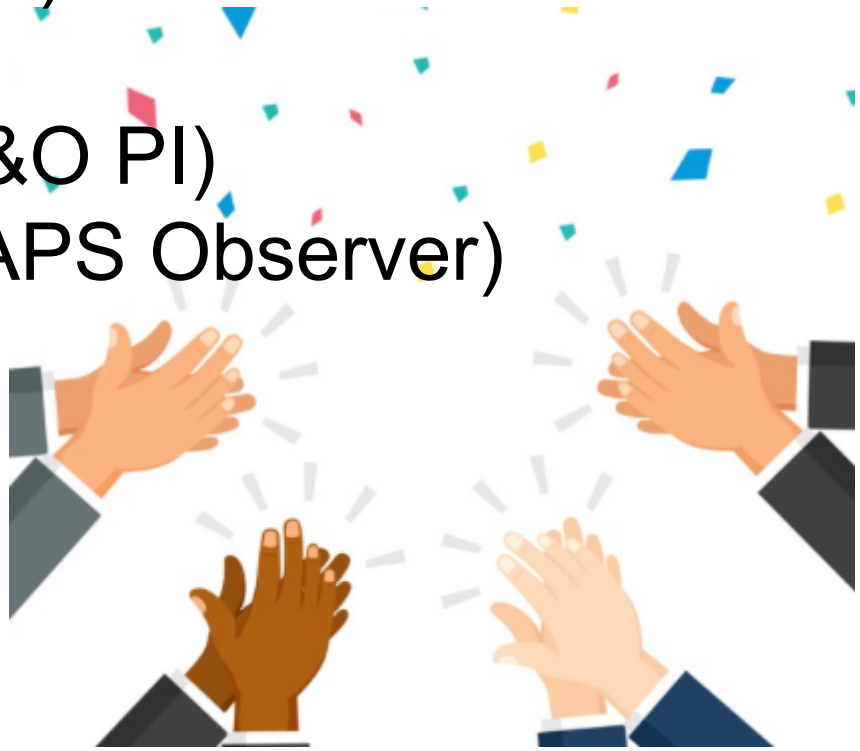
Hans Peter Beck (Outreach & Education)

Danek Kotlinski (ACCU)

Aurelio Bay (Auditor)

Günther Dissertori (M&O PI)

Teresa Montaruli (CHAPS Observer)



October 2019: CHIPP activities and Budget 2020

The specific CHIPP activities for 2020 are:

- The Zuoz Summer PhD School (financial support) **POSTPONED COVID**
- The CHIPP Annual Plenary as part of the SPS/CHIPP Annual meeting (organization, program and active participation)
- The MLHEP 2020 School (financial support) **POSTPONED COVID**
- The RoadMap 2020 Workshop (organization, program and active participation)

The CHIPP outreach activities:

- The dialogue with the society through the SCNAT thematic portal on particle physics
- The CHIPP membership in IPPOG (outreach strategy and activities)
- Possibly other targeted outreach activities as the maintenance of the CHIPP Twitter account.

The Board unanimously:
Approves the CHIPP activities for 2020,
Approves the CHIPP budget 2020 as resulting from the activities, and
Approves the 2020 membership fees for individual members and for institutions.

The Board unanimously

- approves the CHIPP Annual Report 2019 to be made publicly accessible on the CHIPP website;
- approves the annual accounts, the balance sheet, and the profit and loss statement for 2019;
- formally discharges the CHIPP EB and the CHIPP administration for the year 2019, expressing at the same time its thanks and appreciation for the careful accounting.

Swiss Institute of Particle Physics

.. and the same for 2021

The Board this morning has

- ✓ **approved** the CHIPP activities for 2021,
- ✓ **approved** the CHIPP budget 2021 as resulting from the approved activities
- ✓ **approved** the membership fee as well as the institutional fee.

Swiss Institute of Particle Physics

FNSNF
SWISS NATIONAL SCIENCE FOUNDATION

New FLARE Call 2020

Funding LArge international REsearch projects (FLARE)

Call for proposals 2020

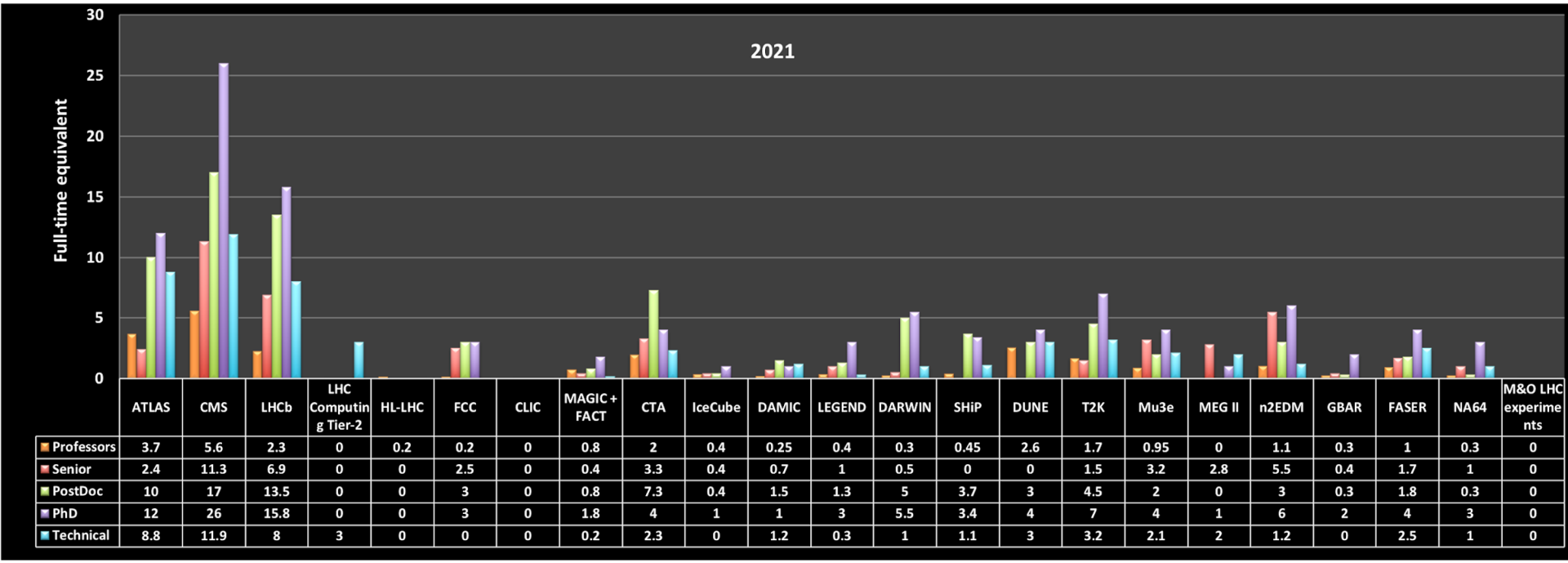
In order to optimise the use of international research infrastructures and organisations by Swiss researchers, the SERI has mandated the SNSF to allocate CHF 43.6 million[1] as an accompanying measure for the 2021-2024 funding period within the framework of the FLARE (Funding LArge international REsearch projects) programme, which complements the funding of scientific research projects. Two calls are planned for the FLARE programme in the 2021-2024 period. The first one is being organised in 2020 and will lead to the award of grants for a duration up to four years.

Major funding source for particle and astroparticle experiments, R&D, operations, technical personpower

- CHIPP input to the FLARE panel on prioritization is requested

During 2020: FLARE Table updates
Data collection & financial requests for 2021-24

FTEs declared for 2021



	ATLAS	CMS	LHCb	LHC Computing Tier-2	HL-LHC	FCC	CLIC	MAGIC + FACT	CTA	IceCube	DAMIC	LEGEND	DARWIN	SHiP	DUNE	T2K	Mu3e	MEG II	n2EDM	GBAR	FASER	NA64	M&O LHC experiments
Professors	3.7	5.6	2.3	0	0.2	0.2	0	0.8	2	0.4	0.25	0.4	0.3	0.45	2.6	1.7	0.95	0	1.1	0.3	1	0.3	0
Senior	2.4	11.3	6.9	0	0	2.5	0	0.4	3.3	0.4	0.7	1	0.5	0	0	1.5	3.2	2.8	5.5	0.4	1.7	1	0
PostDoc	10	17	13.5	0	0	3	0	0.8	7.3	0.4	1.5	1.3	5	3.7	3	4.5	2	0	3	0.3	1.8	0.3	0
PhD	12	26	15.8	0	0	3	0	1.8	4	1	1	3	5.5	3.4	4	7	4	1	6	2	4	3	0
Technical	8.8	11.9	8	3	0	0	0	0.2	2.3	0	1.2	0.3	1	1.1	3	3.2	2.1	2	1.2	0	2.5	1	0

February 2020: Astroparticle Physics International Forum (APIF)

The Board recognizes the importance to continue to have a Swiss representative in APIF.

UniGE is willing to provide the support to **Maurice Bourquin** for his travels to the two APIF meetings/year.

The CHIPP Board asks Maurice to provide a report to the Plenary meeting once a year and in case of important information exchanged in the APIF network, he is asked to communicate it to the CHIPP community.

Update of the European Strategy of Particle Physics

Swiss Institute of Particle Physics

link

European Strategy Update

2020 Strategy Statements

Guide through the statements

2 statements on **Major developments from the 2013 Strategy**
a) Focus on successful completion of HL-LHC upgrade remains a priority
b) Continued support for long-baseline experiments in Japan and US and the Neutrino Platform

3 statements on **General considerations for the 2020 update**
a) Preserve the leading role of CERN for success of European PP community
b) Strengthen the European PP ecosystem of research centres
c) Acknowledge the global nature of PP research

2 statements on **High-priority future initiatives**
a) Higgs factory as the highest-priority next collider and investigation of the technical and financial feasibility of a future hadron collider at CERN
b) Vigorous R&D on innovative accelerator technologies

4 statements on **Other essential scientific activities**
a) Support for high-impact, financially implementable, experimental initiatives world-wide
b) Acknowledge the essential role of theory
c) Support for instrumentation R&D
d) Support for computing and software infrastructure

2 statements on **Synergies with neighbouring fields**
a) Nuclear physics – cooperation with NuPECC
b) Astroparticle – cooperation with APPEC

3 statements on **Organisational issues**
a) Global collaboration on projects in and out of Europe
b) Relations with European Commission
c) Open science

4 statements on **Environmental and societal impact**
a) Mitigate environmental impact of particle physics
b) Investment in next generation of researchers
c) Knowledge and technology transfer
d) Cultural heritage: public engagement, education and communication

Letters for itemizing the statements are introduced for identification, do not imply prioritization

H. Abramovicz (ESG Chair) CERN council meeting 19. June 2020

European Strategy Update

Swiss Institute of Particle Physics

CHIPP Members in the strategy Group:

Tatsuya Nakada (Swiss Representative)
Klaus Kirch (PSI Laboratory Representative)
Lenny Rivkin (Chair EU Lab. Directors' Mtg)
Teresa Montaruli (Chair ApPEC)

Chair of Working Group 3: Relations with other groups and organisations : Tatsuya Nakada

CHIPP Members in the Physics Preparatory Group:

Lenny Rivkin (Chair EU Lab. Directors' Mtg)

\+ Günther Dissertori as CERN Council member

ESPP Update much in line with CH input provided by CHIPP

CHIPP Statement on European Strategy Update

Swiss Roadmap Update 2020

› Swiss Academy of Sciences (SCNAT) › Research infrastructures

Roadmaps for research infrastructures

On a mandate of the Confederation, SCNAT develops roadmaps for scientific research infrastructures. These will form the basis for the Swiss Roadmap for Research Infrastructures (RIs). This roadmap of national and international RIs of interest for Switzerland is used to decide which large research facilities deserve federal support.

CMS particle physics detector on the Large Hadron Collider at CERN. (Image: Maximilien Brice, Cern)

- **We need to update the CHIPP Roadmap:**
  - Inform stakeholders (SERI, SNF, ETH Domain, SwissUniversities, Parliament etc.) to secure future funding (ERI dispatch 2025-2028)
  - European Strategy of Particle Physics
- **A team effort of the whole CHIPP Board!**
  - SCNAT defines process and will provide support (M. Türler, MAP Platform)
- **Goal is to converge by end of 2020**

The State Secretariat for Education, Research and Innovation (SERI) prepares every four years the Swiss Roadmap for Research Infrastructures. This provides a basis for decision-making on the investment of federal funds in research facilities of national interest. The Roadmap is integrated into the ERI Dispatch, which the Federal Council then submits to Parliament for approval.

On request by the SERI, SCNAT develops discipline-specific roadmaps for the natural sciences. These point out which research infrastructures will be necessary in the future and prioritise them from a scientific point of view. The SERI will evaluate the roadmaps for the various fields together with other actors and will decide which research infrastructures are to be included in the 2023 Roadmap and then, possibly, in the ERI Dispatch 2025–2028.

Roadmap History

This report was requested by the Forum of Particle Physics in May 2003. The Working Group contributing to this report was: A. Bay, A. Blondel, A. Clark, Z. Kunszt, P. Minkowski, F. Pauss, A. Rubbia, M. Spira, U. Straumann, and J.-L. Vuilleumier, with additional important contributions from J.-P. Derendinger, R. Durrer and K. Gabathuler.

The report was approved by the CHIPP Board in February 2004.

In May 2003, the Swiss Particle Physics Forum commissioned a study of the status and outlook of particle physics research and education in Switzerland. This publication is the Report of the Working Group appointed to make that study.
The Forum was replaced by a Swiss Institute for Particle Physics (CHIPP) in October 2003. The CHIPP Board endorsed this report in February 2004.

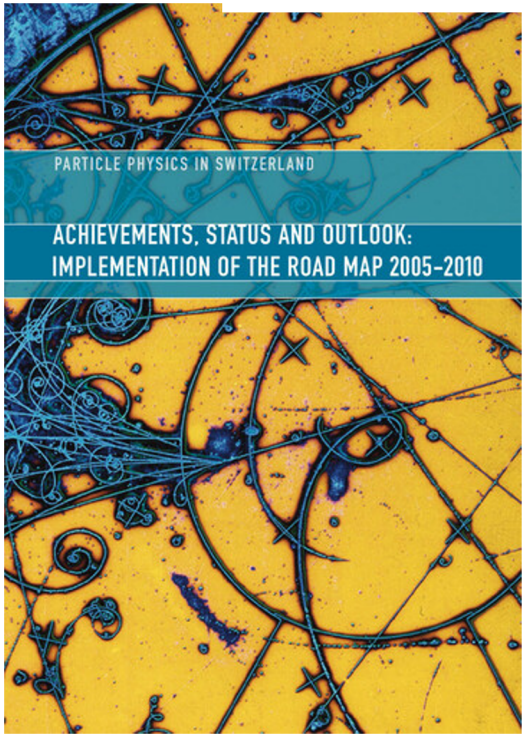
Authors: CHIPP
Pages: 105

May 2003 – February 2004

Bern, April 11, 2011

Text edited by L. Baudis, A. Ereditato and M. Pohl with contributions from the CHIPP Board.

Approved by the CHIPP Board on April 11, 2011, in a unanimous vote with one abstention.



In its Board Meeting of August 2009, CHIPP decided to undertake a critical review of the actual implementation of the Road Map, summarized in the present document. CHIPP encourages Swiss representatives to organizations writing or updating their Road Maps in the relevant domains.

Authors: CHIPP
Pages: 24

August 2009 – April 2011

The 2004 versus 2020 Roadmap

- **The 2004 Roadmap was triggered by the then Swiss Particle Physics Forum (pre-cursor to CHIPP) and addressed:**
  - The own community – take stock of the field, consolidate also in view of LHC
  - To inform wider stakeholder community (SERI, Parliament, public)

- **The 2020 Roadmap still fulfils those goals above with the same (heterogenous) audience**
  - But was triggered by SERI via SCNAT to inform the SERI Infrastructure Roadmap which is populated prior to the ERI dispatch periods
    - Infrastructure Roadmap 2019 informed the 2021-2024 ERI dispatch
- **Community Roadmaps should form the basis for the 2023 SERI Infrastructure Roadmap**
- **Roadmap update is timely to react to the European Strategy Update**

Editorial Team Roadmap 2020

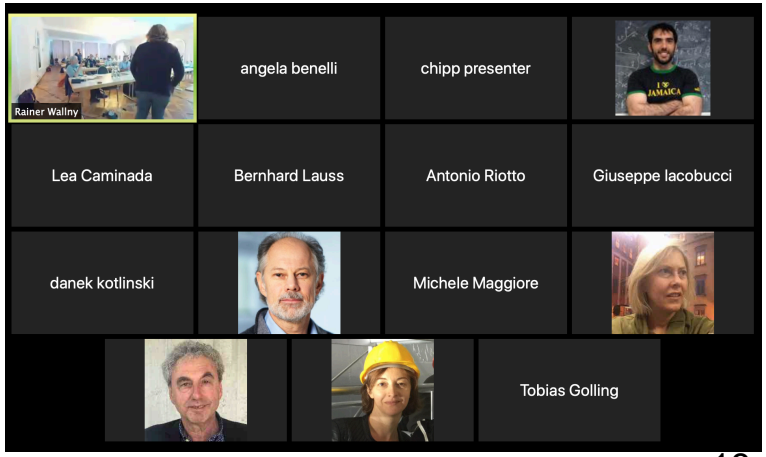
Editorial Team:

composed of the EB members and SWICH workshop coordinators**+** individuals (KM,GD,MS,LR) nominated by the CHIPP EB

- Anna Syrla (high and low energy frontier pillar 1)
- Gino Isidori (theory)
- Günther Dissertori (tech transfer)
- Katharina Müller (outreach and education)
- Michele Weber (neutrino pillar 2)
- Mike Seidel / Lenny Rivkin (accelerator)
- Ruth Durrer (astroparticle pillar 3)
- Rainer Wallny (general structure, main editor, organizational lead)
- Angela Benelli (secretary)

CHIPP Roadmap Workshop

Kandersteg 27-28 August 2020



CHIPP CHAPS working group

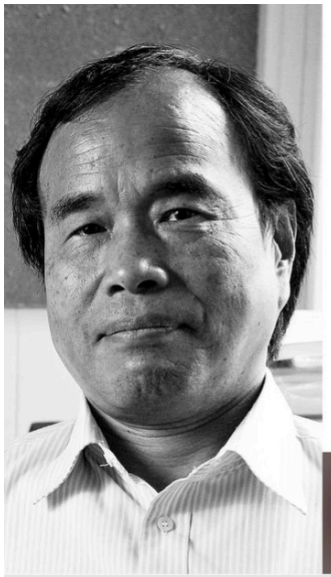
- Ascertain long term interest in grav waves in both communities
- Short term: make contribution to the roadmap about projects at the interface of CHIPP and CHAPS[1]

- **Members: A. Biland, G. Iacobucci, M. Maggiore**

[1]College of Helvetic Astronomy Professors

PRIZE NEWS

Tatsuya Nakada wins Enrico Fermi Prize October 2019



"for the conception and crucial leading role in the realization of the LHCb experiment that led this year to the discovery of the CP violation in D mesons with charm quarks."

22.09.2020 | Press release

Karl Schwarzschild Medal 2020 to F.-K. Thielemann

Image: F.-K. Thielemann

The most prestigious prize in Germany in the field of astronomy and astrophysics, the Karl Schwarzschild Medal, is awarded to Friedrich-Karl Thielemann – member of the MAP Presidium and former MAP President – in honour of his research on the boundary of nuclear physics and astrophysics.

His theoretical efforts, combined with comparison to experiments and observations, has had a significant impact on the understanding of stellar explosions. In his many outstanding theoretical contributions, he predicted nuclear cross sections and reaction rates of nuclei across the nuclear chart, including highly unstable ones.

During his more than 40-year career, he achieved a full circle from nuclear input to studies of stellar evolution and explosions, the formation of heavy elements and the resulting chemical evolution of galaxies. Friedrich-Karl Thielemann excelled in providing the basis for the most extreme events in the universe from type Ia supernovae, novae and X-ray bursts, core-collapse supernovae and hypernovae to neutron star mergers.

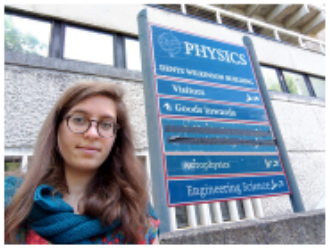
CHIPP PRIZE 2020

Claudia Merlassino will be awarded - as the CHIPP jury put it in its laudation - "for her outstanding contribution in the development of new analysis strategies in the search for physics beyond the Standard Model at the LHC experiments, and for having conceived and conducted an innovative study about the radiation damage of the ATLAS detector in view of the high-luminosity phase of the LHC".

01.07.2020 | News | Press release

Claudia Merlassino wins the CHIPP Prize 2020

The unknown partner of the top quark

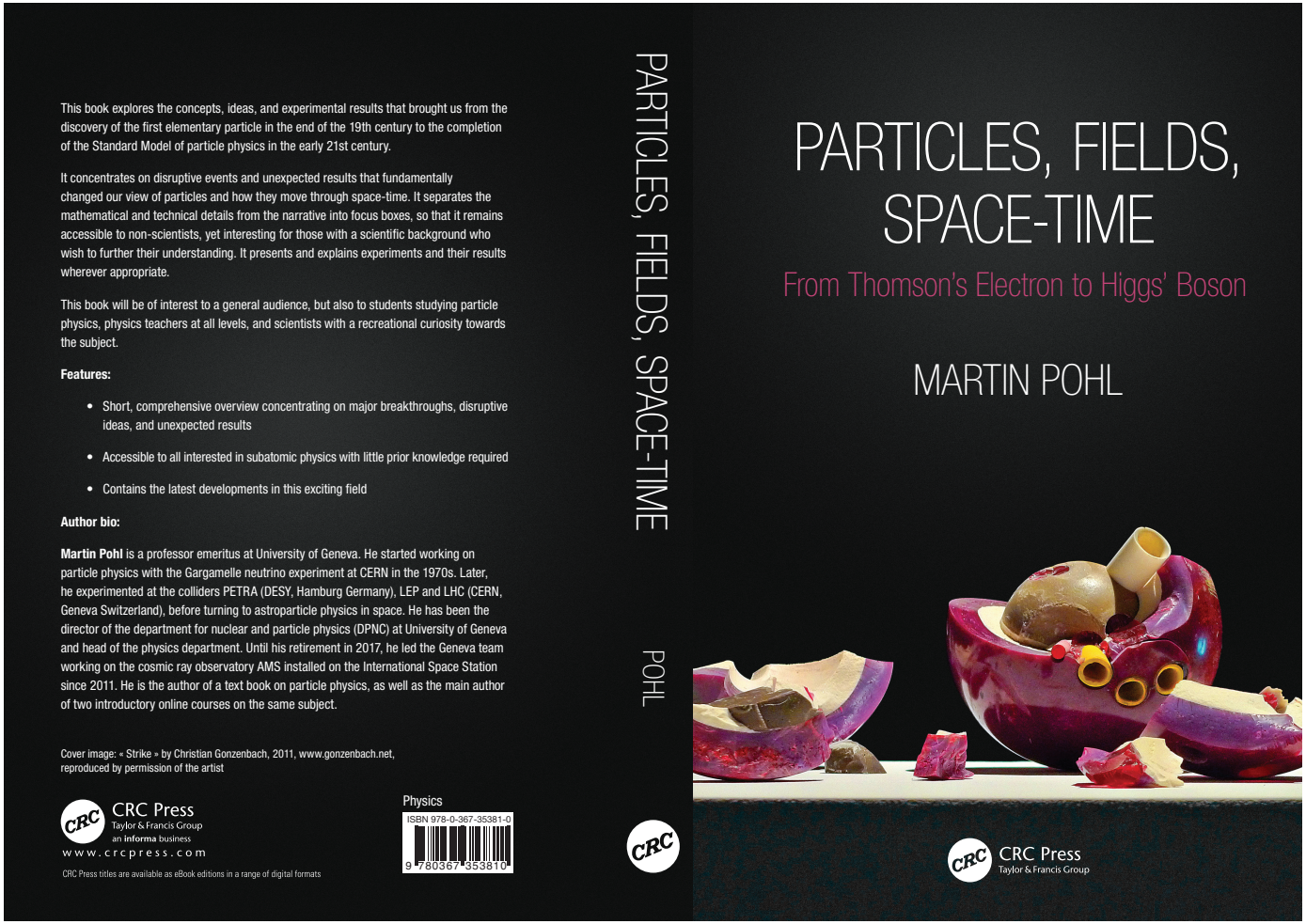


Claudia Merlassino was born in Genoa, studied physics in Milan and completed her doctorate at the University of Bern in October 2019, since then she has been doing research at Oxford University in the UK. At the age of 28, the Italian experimental physicist has already made a remarkable journey as a researcher. She is now receiving the PhD prize in Swiss particle physics - among other things for her findings in the context of the most massive of all elementary particles.

TALK LATER !

Swiss Institute of Particle Physics

Editorial news



This book explores the concepts, ideas, and experimental results that brought us from the discovery of the first elementary particle in the end of the 19th century to the completion of the Standard Model of particle physics in the early 21st century.

It concentrates on disruptive events and unexpected results that fundamentally changed our view of particles and how they move through space-time. It separates the mathematical and technical details from the narrative into focus boxes, so that it remains accessible to non-scientists, yet interesting for those with a scientific background who wish to further their understanding. It presents and explains experiments and their results wherever appropriate.

This book will be of interest to a general audience, but also to students studying particle physics, physics teachers at all levels, and scientists with a recreational curiosity towards the subject.

Features:

- Short, comprehensive overview concentrating on major breakthroughs, disruptive ideas, and unexpected results
- Accessible to all interested in subatomic physics with little prior knowledge required
- Contains the latest developments in this exciting field

Author bio:

Martin Pohl is a professor emeritus at University of Geneva. He started working on particle physics with the Gargamelle neutrino experiment at CERN in the 1970s. Later, he experimented at the colliders PETRA (DESY, Hamburg Germany), LEP and LHC (CERN, Geneva Switzerland), before turning to astroparticle physics in space. He has been the director of the department for nuclear and particle physics (DPNC) at University of Geneva and head of the physics department. Until his retirement in 2017, he led the Geneva team working on the cosmic ray observatory AMS installed on the International Space Station since 2011. He is the author of a text book on particle physics, as well as the main author of two introductory online courses on the same subject.

Cover image: « Strike » by Christian Gonzenbach, 2011, www.gonzenbach.net, reproduced by permission of the artist

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PARTICLES, FIELDS, SPACE-TIME

POHL

PARTICLES, FIELDS, SPACE-TIME

From Thomson's Electron to Higgs' Boson

MARTIN POHL

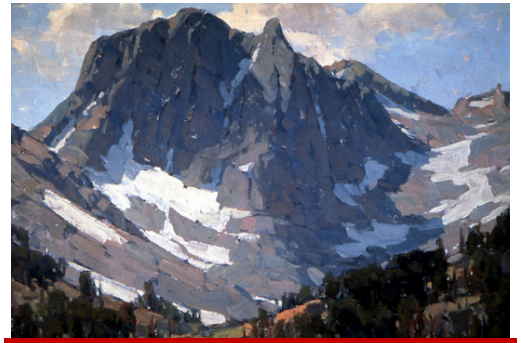
CRC Press
Taylor & Francis Group

Projects for 2021

CH FCC-ee Workshops

⟨S|P|S⟩ swiss physical society

TASK session
Innsbruck
28/6-2/7/2021



CHIPP Plenary 2021

PAUL SCHERRER INSTITUT PSI

Zuoz Summer School 8-14 August 2021

Vision and Precision

https://www.psi.ch/particle-zuoz-school

Registration will open in March 2021
before June: **CHF 650;** later : **CHF 730**

Adrian Signer, Michael Spira, Anita van Loon-Govaerts, **zuoz2021@psi.ch**

Nicolas Berger (Annecy)
Statistics
Brian Petersen (CERN)
From raw data to physics
Vincenzo Cirigliano (Los Alamos)
EFT and low-energy probes of new physics
Barbara Jäger (Tübingen)
Perturbative (QCD) calculations
Angela Papa (Pisa/PSI)
Low-energy experiments
Renato Renner (ETH)
Foundations of quantum mechanics
Andrea Wulzer (CERN/EPFL)
The big questions

All inclusive fee
(meals, lodging, coffee breaks, excursion, conference dinner, tennis and football)

sc|nat Swiss Academy of Sciences Akademie der Naturwissenschaften Accademia di scienze naturali Académie des sciences naturelles

Young physicists event

Swiss Institute of Particle Physics

At the Kandersteg Roadmap Workshop the **Young Physicists** expressed their wish to have a special event organised for both social and cultural purposes.

The idea would be to have this event the day before or after the next CHIPP Plenary annual meeting – possibly the second half of June 2021.

To be organised by the Young with the help of Katharina Müller & Angela ..

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Admission of new honorary members (1)

- Honorary Membership is open to CHIPP Members that have retired from their active professional life or have acquired the status of Professor emeritus.
- Honorary Members benefit from the same rights, except for voting right, and pay no membership fee.
- The admission of Honorary Members belongs to the CHIPP Plenary, based on a recommendation by the Board.
- There are two categories:
  - A: Honorary Board Member,
  - B: Honorary Plenary Member.

Admission of new honorary members (2)

- The following new requests have been received by the Chair:

  Honorary **Board** Member:

  – A. Bay (EPFL), C. Grab (ETHZ), A. Ereditato (UniBe)

  Honorary **Plenary** Member:

  – T. Nakada (EPFL), D. Kotlinski (PSI)

The Plenary is invited

– **to take note** of the recommendation of the Board regarding the admission by the end of 2020 of the person listed above as Honorary Board Members;

– **to approve** their admission as Honorary Members by the end of 2020.

Base: Article 19.3, litt. f; simple majority

Election of the Swiss representative in the ACCU

Danek Bohdan Kotliński has served for one two-year terms as ACCU representative from 2019 to the end of 2020. He will retire in 2021 and not able to serve another term. The call for nominations among the Board Members has resulted in only one candidate, Sergio Gonzalez Sevilla, who is ready to serve in this function for the years 2021-2022.

On recommendation by the Board, the Plenary is invited

to elect **Sergio Gonzalez Sevilla**

for a first two-year term from January 2021 to December 2022 as ACCU representative.

Base: Article 19.3, litt. e; simple majority

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B. Krusche

NuPEC report

- **Bernd Krusche**

  Link self evaluation

  – Link talk

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G. Dissertori/ L. Rivkin

CERN Council report

- **L. Rivkin (on behalf of G. Dissertori)**
  - link

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P. Jetzer

Talk on Gravitational Waves

- **P. Jetzer (UZH)**
  - link

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G. Isidori

CHIPP Prize 2020

- **Claudia Merlassino**

Swiss Institute of Particle Physics

B. Kotlinski

ACCU Report

- **B. Kotlinski**

Swiss Institute of Particle Physics

M. Seidel

ECFA Report

- **M. Seidel**

ECFA call for nominations

Every country is asked to nominate up to three members for a permanent Early-Career Researcher (ECR) panel

Members are, in general, PhD students and postdocs, either with a non-permanent contract or with up to 8 years after obtaining the PhD. Up to three members can be nominated by each ECFA country and each major laboratory represented in ECFA for a mandate of 2 years, extendable with another 2 years. In general, the delegation from each ECFA country should have at least one PhD student and at least one postdoc. Nominations are to be endorsed by Plenary ECFA. Members are nominated by and assigned to the quota of the country they are hired at the moment they become member of the panel.

Nominations (including self nominations) with a CV of the candidate to be sent to the CHIPP EB (contact Angela Benelli (angela.benelli@cern.ch)) before 21st October 2020

Swiss Institute of Particle Physics

X. Wu

APPEC report

- **Xin Wu**

First Cherenkov Telescope Array (CTA) day in Switzerland on Nov. 24

All the information on the event, together with a detailed agenda can be found on the meeting indico https://indico.cern.ch/e/SwissCTA2020

Swiss Institute of Particle Physics

G. Colangelo

ECT* Report

- **G. Colangelo**

Swiss Institute of Particle Physics

HP Beck

Outreach report

- **Hans Peter Beck**

Swiss Institute of Particle Physics

M. Donega

CHIPP Computing Board Report

- **M. Donega**

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AOB ?

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AOB ?

Thank you!