



an Association according to Swiss law

Annual Report 2017



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This report is to be delivered to SCNAT and is thus structured along the SCNAT guidelines.

SUMMARY

Highlights of the Year

We started 2017 with the very successful [Gender in Physics Day](#) on the 26th of January at the Musée d'Ethnographie de Genève. The primary topic of the meeting was the analysis of the existing actions towards Gender Equity Practices in Physics and Astronomy. This was followed from the 12th to the 17th of February by the CHIPP [PhD Winter School 2017](#) hosted in Sörenberg. The purpose of the school was to offer young physicists an opportunity to learn about recent advances in elementary-particle physics from local and world-leading researchers.

The main highlight of 2017 was the [CHIPP Annual Plenary Meeting](#) held at CERN (Geneva) on Monday 22nd August 2017. A rich scientific program covered the three CHIPP pillars: particle physics at the high-energy and intensity frontiers, astroparticle physics, and neutrino physics. There was a session with reports of the activities of the various committees such as the European Committee for Future Accelerators, the International Particle Physics Outreach Group, the Astroparticle Physics European Consortium (APPEC) and the Nuclear Physics European Collaboration Committee (NuPECC). During the meeting CHIPP held the elections to cover the different roles in the association and to select the Swiss representatives in the international organizations.

The event was organized during the first day of the [Joint Annual meeting of the Swiss and Austrian Physical Society \(SPS/OPG-CHIPP\)](#), together with the Swiss Society for Astrophysics and Astronomy (SSAA) and of NCCR MARVEL, all of whom helped making this meeting a great success.

Due to the exceptional venue of the conference at CERN during its first two days, we had the opportunity to invite the CERN Director General Fabiola Gianotti to open the events. She presented the long list of research activities at CERN, highlighting the recent discoveries. Martin Steinacher and Frédérick Bordry presented in detail the future of particle physics introducing the new projects at increased luminosity and the projects to be evaluated in the future.

The two evening public conferences were great moments: at CERN, Matthew Philipp McCullough gave a brilliant talk entitled "[A Higgs-Eye View of the Cosmos](#)" and at the Centre International de Conférences Genève (CICG), the astrophysicist and President of Swiss and European academies Thierry Courvoisier spoke about "[De la place de la Science dans la Société](#)".

At the CIGC, where the conference moved for the rest of the week, as part of the SPS award ceremony where all winners of the various SPS prizes are honored, the [CHIPP prize](#) for the best 2017 PhD thesis work in particle physics was awarded to Johanna Gramling from the University of Geneva for her outstanding work on “dark matter searches with the ATLAS detector and her role in establishing the use of simplified models for their theoretical interpretation”, as the laudatio states. Johanna had the opportunity to present her work as first speaker of the TASK¹ parallel sessions. With the record number of more than 100 [submitted contributions](#) related to particle Physics & Astrophysics, the talks were organized in one overview and nine topical sessions giving insight to the current theoretical and experimental status of particle and astroparticle physics at high, medium, and low energies.

Another important event was held on the 27th October: SERI organized a **Round Table** meeting² on the occasion of the first official visit of the Director General Fabiola Gianotti to Bern to meet the Government representatives: the Director of the Economic Department of Formation and Research (DEFR) and the federal councilor Johann N. Schneider-Ammann. At the Round Table meeting the representatives of the high-profile Swiss scientific Institutions were present reporting about the Swiss participation in CERN activities, with particular focus on the political aspects of research and on education and outreach.

The **CHIPP outreach** activities evolved in 2017 with the online release of the new CHIPP website [chipp.ch](#) as a new thematic portal hosted on the SCNAT website and with the continued support of the multi-lingual “[particlephysics.ch](#)”. Thanks to the SCNAT support, we could continue to keep this a lively page with the addition of 13 interviews and other news articles and press releases in 2017.

A special event for the public was organized on Halloween, the 31st October, at the Luzern Planetarium in the frame of the [Dark Matter Day](#). Researchers from the University of Zurich presented their work and answered questions about this research area.

The link with the Swiss media was continued in 2017 with a new Swiss member in the **European Particle Physics Communication Network (EPPCN)**. Concrete outcomes are: a list of the [media coverage of particle physics in Switzerland](#) and the interviews and presentations of many Swiss physicists present at the EPS-HEP conference in Venice in July 2017 on the Social media of the Conference: [Facebook](#) and [Twitter](#). During 2017 the CHIPP Twitter account has been re-activated under the name [@CHIPP_news](#). Spreading physics news to increase the public curiosity about science was our primary goal. Knowledge Transfer and campaigns focused on attracting younger generations to physics are important challenges that will be pursued also in the coming years.

SECTORS OF COMPETENCE: NETWORKING AND DEVELOPMENT OF SCIENCE

Publications

The [summary](#) of the Strategy Workshop for High-Energy Particle Physics in Switzerland (SWHEPPS 2016) has been written and presented to the CHIPP Board on 1st July 2017. This document is serving as the basis for the preparation of a strategic document on particle physics at the high-energy and intensity frontiers, referred to as the CHIPP Pillar 1 White Paper. The Editorial Board started its work in November 2017 and should provide a document ready for the first CHIPP [Strategic Workshop](#) in April 2018.

Meetings, Workshops and Schools

In 2017 CHIPP continued to work on its networking and educational goals and organized directly or through its members several meetings, schools and workshops. In chronological order:

- [Zurich Phenomenology Workshop](#), 9th-11th January 2017. Over the recent years the Zurich Phenomenology Workshop has developed into an internationally renowned forum for particle physics researchers to discuss the latest developments in phenomenology. The workshop in

¹ TASK = Kern, Teilchen und Astrophysik Section

² <https://www.admin.ch/gov/fr/accueil/documentation/communiques.msg-id-68575.html>

January 2017 with 77 participants was organized jointly by ETH and UZH with the support of the ETH Pauli Centre for Theoretical Studies. This year's focus was on the new results from LHC and their consequences for physics beyond the Standard Model, as well as discussions on precision phenomenology in the future.

- The [Gender in Physics Day](#), 26th January 2017 held at the Musée d'Ethnographie de Genève. The primary topic of the meeting was the analysis of the existing actions towards Gender Equity Practices in Physics and Astronomy Research.
- The [PhD Winter School 2017](#), 12th-17th February 2017 in Sörenberg, Switzerland.
- The [Young Physicists Forum](#), 22nd-23rd April 2017. This year's annual Young Physicists Forum (YPF), which for the last few years has been providing a meeting place for physics students from all Swiss universities, was hosted by the student associations of UZH and ETHZ. In total 48 participants attended the event which focussed on computational science. The programme included a workshop in digital electronics as well as five invited talks. Given the large attendance and the positive feedback of the participants, this event can be considered a big success.
- [Invisibles workshop 2017](#), 12th-16th June 2017 at UZH. The workshop at the University of Zurich was attended by 160 participants, with thematic sessions (agenda) on beyond the Standard Model physics, neutrinos, cosmology, dark matter and more.
- [Invisibles school 2017](#), 5th-9th June 2017 at Centre Loewenberg, Murten. The annual Invisibles17 event was hosted by the University of Zurich. Both focussed on neutrino, dark matter and CPV physics and their connections, and more generally on physics beyond the Standard Model. 57 PhD students attended the school, which took place at the SBB Centre Lowenberg in Murten, and included lectures, tutorials and a poster session.
- [ACES workshop](#), 29th-30th June 2017 at UZH. Fundamental and applied science with clocks and cold atoms in space. ACES (Atomic Clock Ensemble in Space) is a space mission whose heart is an ensemble of atomic clocks on board the international space station (ISS) and microwave and optical links to compare the on-board clocks to clocks on the ground. It features a cold atom clock (PHARAO) that will bring unprecedented accuracy into space, together with world-wide dissemination of its time-scale to ground clocks. The launch of ACES/PHRAO is expected for end 2018. About 60 participants followed the 2-day workshop at the Irchel Campus.
- The [CHIPP Annual Plenary](#) is the yearly gathering of the Swiss particle physics community. It was held on 21st-22nd August 2017 in CERN, Geneva in conjunction with the annual meeting of the Swiss Physical Society (SPS). The SPS TASK session was devoted to the CHIPP PhD/Postdoc days, where around 100 talks and posters were presented.
- The [SERI/CERN Round Table meeting](#)⁽³⁾ on the 27th October to discuss the Swiss involvement in CERN.
- A Workshop on the [Impact of \$B_s \rightarrow \mu\mu\$ on New Physics Searches](#) was organised by PSI and the University of Zurich at the Paul Scherrer Institute, 18th-19th December 2017.

INTERNATIONAL ACTIVITIES

Scientific cooperation

Research in particle and astroparticle physics usually involves large infrastructures, which are the result of regional, national and worldwide collaborations. In order to cover the important intellectual and technological challenges, the amounts of human and financial resources required excludes their being undertaken by a single country. The table below shows a snapshot of the current experimental collaborations involving CHIPP Board members.

Further, smaller cooperation projects exist; many of them occur naturally – between groups working in the same field or requiring the same type of infrastructure – or coordinated bottom-up by CHIPP.

Project	Swiss institutes	CHIPP Board Members	Institutes worldwide
High-Energy particle physics			
ATLAS	Bern, Geneva	Beck, Ereditato, Golling, Iacobucci, Mermoud, Nessi, Sfyrla, Weber, Wu	182
CMS	ETHZ, PSI, Zurich	Canelli, Dissertori, Grab, Horisberger, Kilminster, Pauss, Wallny	201
LHCb	EPFL, Zurich	Bay, Nakada, Schneider, Serra, Straumann	72
LHC Tier-2	ETHZ, CSCS	Grab	> 200
HL-LHC	EPFL	Rivkin	55
CLIC	ETHZ, PSI	Rivkin	70
FCC	Bern, EPFL, Geneva, PSI	Blondel, Rivkin, Dissertori	122
Astroparticle physics			
AMS	Geneva	Pohl, Wu	63
ArDM	ETHZ, Zurich	Rubbia	7
CTA	ETHZ, Geneva, Zurich	Biland, Courvoisier, Montaruli, Neronov, Straumann, Canelli	210
DAMIC	Zurich	Kilminster	10
DARWIN	Bern, Zurich	Baudis	24
IceCube	Geneva	Montaruli	49
MAGIC+FACT	ETHZ, Geneva	Biland, Neronov, Pauss	24-4
XENON	Bern, Zurich	Baudis, Schumann	21
Neutrino physics			
GERDA	Zurich	Baudis	19
MICE	Geneva	Blondel	28
NA61 / T2K / HyperK	Bern, ETHZ, Geneva	Blondel, Ereditato, Rubbia	32-63-74
SBN (MicroBooNE)	Bern	Ereditato, Weber	31
SHiP	EPFL, Geneva, Zurich	Bay, Blondel, Kilminster, Mermoud, Serra, Shaposhnikov	52
WA105 + DUNE	Bern, ETHZ, Geneva	Blondel, Rubbia, Weber	21-174
High-precision and muon physics			
CREMA	ETHZ, PSI	Hildebrandt, Kirch	9
GBAR	ETHZ	Rubbia	18
MEG II	PSI	Hildebrandt, Ritt	15
Mu3e	ETHZ, Geneva, PSI, Zurich	Blondel, Dissertori, Grab, Hildebrandt, Ritt, Straumann, Wallny	8
nEDM	ETHZ, PSI, Bern	Kirch, Piegsa	15
PANDA	Basel	Krusche	64

In parallel to these experimental collaborations and projects, Swiss theorists are involved in numerous international collaborations. The following list shows the largest and most important ones, in which Swiss theory institutes are key players:

- The [LHC Higgs cross-section working group \(LHCHXSWG\)](#) was created in 2010 to produce agreements on cross sections, branching ratios and pseudo-observables relevant to the Higgs boson(s);

- The Workshop Series “[Physics at TeV Colliders](#)” are meetings held at Les Houches (France) every second year since 1999;
- The [Snowmass physics studies](#).

The University of Zurich, ETHZ and PSI participate in ‘[HiggsTools](#)’ (2014–2017), an FP7 Initial Training Network of the European Commission, whereas the University of Bern is coordinating the activity of the [Flavour Lattice Averaging Group \(FLAG\)](#) (since 2011).

One particular example of scientific collaboration and help at the service of the new arrivals in the LHCb experiment has been provided by the EPFL team that has built the [LHCb starterkit project](#) where the lessons from the dedicated Workshops and online tutorials are stored.

The EPFL has contributed with the SciFi Tracker³ detector construction at the LHCb experiment. Two short videos have been produced, one to introduce the aim of the [experiment](#) and one to show the technique of the [construction](#) of part of the detector. The videos have a definitive value for the insiders and are an inspiration for future scientists. On the same subject an [article](#) appeared on the EPFL home page.

Institutional collaboration (in alphabetical order):

Several CHIPP members are acting as official delegates to international organizations in 2017:

- **Hans Peter Beck** (Uni. of Bern) has been the co-Chair of the International Particle Physics Outreach Group ([IPPOG](#)) since 2013, and he has been elected President of the Swiss Physical Society on the 22nd August 2017 for a period of two years.
- **Angela Benelli** (Uni. of Zurich) has been the Swiss member of the European Particle Physics Communication Network ([EPPCN](#)) since June 2017.
- **Laura Baudis** (Uni. of Zurich) is part of the [CERN Scientific Policy Committee](#) till the end of 2018.
- **Alain Blondel** (Uni. of Geneva) is member of the International [Steering Committee](#) for the Hyper-Kamiokande project and member of the [FCC design](#) study coordination group.
- **Florencia Canelli** (Uni. of Zurich) has been a member of commission C11 of the International Union of Pure and Applied Physics ([IUPAP](#)) on particles and fields since Nov. 2014. She has been elected secretary of the IUPAP C11 Commission from 1 January 2018 for 4 years. She is also a member of the Physics Advisory Committee of Fermilab.
- **Günther Dissertori** (ETHZ) has been Chair-person of the International Advisory Committee for the [FCC](#) project since the beginning of 2017. He is member of the scientific policy committee of the INFN National Laboratory of Frascati, and will chair this committee starting in 2018.
- **Michael Dittmar** (ETHZ) has been the Swiss representative in the Advisory Committee of CERN Users ([ACCU](#)) since 2015.
- **Antonio Ereditato** (Uni. of Bern) is the ad interim contact for the Swiss funding agencies ([SER](#) & [SNSF](#)) for Swiss participation in the neutrino programme at Fermilab, USA.
- **M. Hildebrandt** and **J.-B. Mosset** (PSI) served in 2017 as Swiss delegates to the IAEA [‘Technical Meeting on Neutron Detection’](#).
- **Roland Horisberger** (PSI): is member of the [XFEL](#) Detector Advisory Committee (DESY) and of the KIT Advisory Committee (Particle Physics & Accelerators)
- **K. Kirch** (ETHZ and PSI) is member of the Scientific Advisory Committee [SAC](#) of the European Spallation Source ESS in Lund/Sweden, is a member of the Hyper-Kamiokande [Advisory Committee](#) in Japan, is a member of the [Scientific Council](#) of the Excellence Cluster PRISMA in Mainz/Germany, is a member of the [Scientific Advisory Board](#) of the Stefan-Meyer-Institute in Vienna/Austria.
- **Bernd Krusche** (Uni. of Basel) continued his longstanding mandate as Swiss representative in the Nuclear Physics European Collaboration Committee ([NuPECC](#)).

³ SciFi Tracker = Scintillating Fibre detector used for tracking.

- **Teresa Montaruli** (Uni. of Geneva) has been the Swiss scientific delegate to the General Assembly of the Astroparticle Physics European Consortium ([APPEC](#)) since 2013. Teresa Montaruli has been nominated unanimously as vice-chair of the General Assembly. She is also member of the LNGS [Scientific Advisory Committee](#).
- **Katharine Müller** (Uni. of Zurich) has been the Swiss representative in the [IPPOG](#) Collaboration since September 2017.
- **Tatsuya Nakada** (EPFL) is Chair of the Linear Collider Board [LCB](#) (subpanel of ICFA), is member of the NIKHEF Scientific Advisory Committee [SAC](#), is Chair of the [LNGS Scientific Advisory Committee](#), is Chair of the KEK Belle Program Advisory Committee.
- **Felicitas Pauss** (ETHZ) has been the Vice-President of the [SNSF](#) Foundation Council since 2014 and she is member of the Executive Board at the SCNAT.
- **S. Ritt** (PSI) is president of the Nuclear and Plasma Sciences Society [NPSS](#) of IEEE
- **Leonid Rivkin** (EPFL and PSI) is mandated by the CHIPP Plenary to represent the Swiss particle physics community in the Restricted [ECFA](#) (European Committee for Future Accelerators) from 2013 to 2018. In the Plenary ECFA, he is supported by **Olaf Steinkamp** (Uni. of Zurich, since 2013), **Sigve Haug** (Uni. of Bern, since 2014), and **Andreas Knecht** (PSI, since 2016).
- **Olivier Schneider** (EPFL) has been the Swiss scientific delegate to the [CERN Council](#) since 2013 on mandate of the State Secretariat for Education, Research and Innovation (SERI).
- **Ulrich Straumann** (Uni. of Zurich) is mandated since 2010 by the "Round Table International" to represent the Swiss participants in the Resources Board of the Cherenkov Telescope Array (CTA) project.
- **Rainer Wallny** (ETHZ) is member of the Physics Advisory Committee of [DESY](#).
- **Xin Wu** was re-elected as CHIPP observer in the Swiss Commission on [Space Research](#) till December 2019.

COORDINATIVE TASKS

Promotion of the next generation

One of the main objectives for CHIPP is to attract the young public to Physics and Astroparticle Physics. To achieve this goal more than 50 educational events like information days for BSc and MSc students, for pupils finishing high school and for high-school classes were organized, throughout Switzerland, involving more than 4000 young students.

More than 150 Swiss high-school pupils (at the Universities of Bern, Geneva, Zurich and the ETHZ) were invited to participate at the [International Masterclasses 'Hands on Particle Physics'](#), where over 13'000 Gymnasium level students in about 215 institutes in 52 countries can actually work with real data from the CERN Large Hadron Collider (LHC).

At the University of Zurich for example, for the 10th time the [International masterclass](#) in particle physics (CMS data) was organized on the 24th March 2017, with a new record of 79 participants.

One of the EPFL members has invested a lot of efforts on the Masterclass organization and has taken the responsibility for running the [International Masterclass program for LHCb](#) together with other two EPFL members.

A few events for physics teachers have been organized in the different Institutes, in particular at the University of Zurich a very complete [program of events](#) has been organized by Katharina Muller. At the EPFL one high school physics teacher has been hosted for a semester. In Geneva one training day about "physics and mathematics" was organized.

Each institute has its own program towards young students and often organizes special events. This year one should mention in particular the following activities:

*At the **University of Zurich** several events have been organized for high school students:*

- *The 11th March: [Science Info Day](#) The information day on the campus Irchel was attended by about 650 high school students. About 150 students and teachers joined the tours through our laboratories and the lecture by Titus Neupert.*

- On 6th-7th September, the [study information days](#), organised by UZH and ETH, provided an overview of the broad study program in Zurich, about 100 high-school students attended the lecture on the presentation of the physics major at UZH.
- **Open-day of the physics department** was held on 24th November. The doors of our labs were opened and the research groups presented posters with recent highlights. The alumni of the department were invited.
- **Education for schools:** 15 high school classes were invited to participate to a series of events: Introduction to particle physics (6 classes), Cosmic Rays and Neutrinos (1 class), Absorption (1 class), Visits of the labs of the institute (7 classes)

ETHZ organized a series of 10 special event days for 100 gymnasium high-school students in October and November: [ETH-unterwegs](#). The students were invited to ask questions about studying at ETH Zurich and to participate to some experiments in the exhibit hall. In addition, professors from ETH Zurich presented some current research topics bringing their enthusiasm for research directly into the classroom, here is [the program](#).

G. Dissertori (ETHZ) was invited give a talk for ETH students at the "[Erstsemestrigen-Weekend](#)" held in Elm in September.

The **University of Bern** organized the [tunBern](#) from the 28th April to the 7th Mai 2017. Children and young people had the opportunity to immerse themselves in an interactive world around technology and science at the special show and to discover something new. At the stand of the [iLab](#), the young visitors had the opportunity to use the spectrometers to explore the composition of matter from their own environment. Two "fresher days" were organized for cantonal gymnasias and for extra-cantonal gymnasias students with a total of 150 pupils guided through the physics department of the University of Bern. The experimental particle physics department participated to the [Nationaler Zukunftstag](#). At the Gymnasium Koeniz-Lerbermatt was set up a temporary exhibition of a spark chamber.

The **EPFL** Professors Schneider, Rivkin and Stramaglia have organized three visits to CERN for a total of 150 students including EPFL Bachelor students, EPFL Master students and a group of High-school students from Italy.

With the aim of creating an interdisciplinary knowledge at the university level, the EPFL has collaborated with the University of Lausanne at the program "[Science au carre](#)" providing science courses for the students that follow humanitarian studies.

Particle physicists at **PSI** are routinely guiding visitors (~1000 per year) through the facilities and a science exhibition in the frame of the PSI-Forum. School classes are also coming with their teachers to visit the PSI school laboratory '[iLab](#)'. PSI was also involved in the very successful "[Nationaler Zukunftstag](#)" where boys and girls of the Swiss schools come to explore new professional horizons, a special effort is put in discovering jobs that are usually performed by the opposite gender

In **Geneva** on the 1st March 2017 was held at the University an information open day for around 2000 pupils in the last year of high-school. During the 3 days [Stage boussole](#) several visits of the physics department and of the teaching classes were organized. The students were also accompanied to visit the ATLAS experiment at CERN. Another very important program organized by the University of Geneva is [Athena](#). It is an advanced curriculum in physics that allows motivated high school students to discover the scientific areas of study at the University level and to anticipate possibly a part of their academic studies.

Teresa Montaruli participated at the "[TecDay](#)" at the College Rousseau in Geneva. The event was organized for high-school students to show the several applications of mathematics and physics in the daily life and how technology can improve our society. Teresa participated also at the "La Nuit de Metiers" at the Florimont School in Geneva.

This year on the occasion of the [Nuit des Chercheurs](#), Friday 29th September, CERN organized a special stand and talk "**Pourquoi faire de la science dans l'espace ?**" Dr. Mercedes Paniccia, from the University of Geneva, researcher in the space experiment AMS was present to answer questions and guide the students.

About 50 visits to CERN took place, not only for university students in physics and other disciplines, but also for children, high-school pupils, alumni, members of societies, the media, and the public at large. CHIPP Board Members gave about 70 outreach talks on particle physics for high-school students, societies and the general public.

As already mentioned at the beginning, the [CHIPP prize](#) 2017 for the best PhD thesis work in particle physics was awarded to Johanna Gramling from University of Geneva for her outstanding work on "dark matter searches with the ATLAS detector and her role in establishing the use of simplified models for their theoretical interpretation", as the laudatio states. She presented her thesis work at the SPS/ÖPG Joint annual meeting and received the diploma and the prize money (3000 CHF).

Information and coordination tasks supporting research and science

[CHIPP's website](#) contains news, documents, minutes of all meetings, as well as the link to the complete membership database. The continuous dialogue between the institutes, which is enshrined in the [CHIPP Statutes and By-Laws](#), aims at having at hand in a timely and transparent manner the information about current and planned research activities. This information is collected annually in the so-called **CHIPP Long-term Financial Tables** and includes for each experiment or project the detailed manpower involvement per institute and the attributed funds for past and current years, as well as projections and needs for the future years.

In a short prioritisation talk at the FLARE Panel meeting held on 19th–20th January 2017, the CHIPP Chair was asked to present CHIPP priorities as a short introduction. Stéphane Udry did the same for CHAPS. The individual project leaders then had 10 min to present their project to the FLARE panel and 10 min to answer questions. This was not public. The FLARE funding was announced to the PIs on Feb. 17, the results were communicated during the first Board meeting of the year 2017 and are available in the [chair's slides](#).

As in previous years, CHIPP took an active role in the biannual meetings of SCNAT's **Round Table International**. This information forum on the participation of Swiss groups in international research facilities comprises also representatives of the SERI, SNSF, and "Swissuniversities". With the widening of its scope to fields of natural sciences other than astronomy and particle physics it is now officially called Round Table International Organisations and Research Infrastructures (RoTIOI).

Dialogue with society

The SCNAT offered a firm place with increased visibility among the other fields of science for both the CHIPP website and the more general Physics outreach website ("[particlephysics.ch](#)"). The site was kept lively throughout 2017 with the addition of 13 interviews and other news articles. As approved by the CHIPP Board, the articles are authored by *Benedikt Vogel*, a science journalist collaborating with CHIPP since many years, *Hans Peter Beck* was responsible for their scientific content and *Angela Benelli* inserted them on the SCNAT portal in Italian, in German and in English. CHIPP is grateful to SCNAT for supporting this activity as an important dialogue with the society.

A. Benelli was responsible for the CHIPP Twitter account [@CHIPP_news](#), the Facebook site [Verflixtes Higgs](#) continued to be fed by H. P. Beck.

At the EPFL a team has created the LHCb Experiment Twitter account: [@lhcbexperiment](#) and the [LHCbExperiment](#) Instagram Account.

Several events organized for the public have taken place:

[Scientifica 2017](#) – “*What data reveal*”, 1st-3rd September 2017, Zurich. Scientifica took place in the main buildings of University of Zurich and ETH, it attracted thousands of interested people. The UZH and ETH institutes were present with a show, two short lectures and a booth. Hugo Keller and Peter Robmann revealed the physics behind every day phenomena in a show with many fascinating experiments. Titus Neupert talked in a short lecture on the progress in the development of quantum computers and explained what these computing machines can be used for in the future. The lecture by Ben Kilminster and the presentation at the booth with the participation of the LHCb and CMS groups of the UZH and ETH institutes, showed how unprecedented large data sets, collected at extraordinary rates, can be distilled into a single yes/no answer taking as an example the discovery of the Higgs boson. In total, the event welcomed 30'000 visitors during the three days, many of them visited our booth that was very busy.

In the frame of the [Dark Matter Day](#), the 31st October 2017 the movie “[Phantom of the Universe: The Hunt for Dark Matter](#)” (Austria 2016) was screened at the Planetarium of Luzern where some staff from the University of Zurich installed a stand to explain and answer questions about Dark Matter to the public.

The 2nd March 2017 at the « [Salon des technologies et de l'innovation de Lausanne \(STIL\)](#) », Swiss Tech Convention Center at the EPFL, the EPFL-LHCb team presented a stand with a cosmic ray tracker demo and the SciFi tracker project showing a prototype of the fibre module used in LHCb.

The University of Basel organized a special event in February 2017: “[Saturday Morning Physics: Von Schwarzen Löchern Und Harmonischen Klängen](#)” with a talk by F. Thielemann on neutron stars, black holes and gravitational waves. On the 16th November 2017: [Gravitationswellen – als neues Werkzeug der Astrophysik und Kosmologie](#), an evening with presentations on neutron stars and gravitational waves of F. Thielemann, H. Liebedoerfer and S. Antusch. Both events were very successful with more than 300 people attending each one. An article on the same subject was also published in the [TagesWoche](#) signed by F. Thielemann.

The 8th May 2017, B. Krusche had a talk in the '[SeniorenUni](#)': '[Quarks, Gluonen, Hadronen: die wundersame Welt der starken Wechselwirkung](#)' that was so very well attended that it had to be presented again the following day because the participants would not fit into the large lecture hall at once.

G. Dissertori from the ETH Zurich gave several talks to the public: in January 2017, there was a public evening talk at for the Helvetia association, in March 2017 he was invited to give a talk and to participate at the following discussion at the "Naturwiss. Gesellschaft Winterthur". In October, he was invited for a talk at a Business event of the Flughafen AG and for a talk at SwissRe.

During the last very successful “[Automnales fair](#)” at the Palexpo in Geneva (the estimated number of presences was 150'000) CERN was the honored host. In this occasion the [Physiscope](#) has performed 14 physics shows on the CERN's stand about superconductivity and physics related to LCH. The shows were attended by more than 1000 very curious people.

Tobias Golling from the University of Geneva participated at the discussion “[Inside CERN](#)”, a celebration of Swiss-Israeli Scientific Cooperation, organized by the Embassy of Switzerland in Israel presenting: “Tête-à-tête on exotic physics”, with an audience of about 500 people. At the same event Hans Peter Beck was invited to presented together with Profs. Eilam Gross “Tête-à-tête on Higgs”, more than 700 participants attended.

Teresa Montaruli (University of Geneva) made a presentation at the “[MUST/RESOLV Gender and Science Meeting](#)”, September 2017, ETH Zürich “[GENERA in Physics and for Physics: status quo and future](#)” on key issues and current initiatives to counter gender imbalance in science. Always from the

University of Geneva, Anny Sfyrla talked to primary school students about physics and CERN in the occasion of UN's 2017 International Day of Women and Girls in Science.

In March 2017 the University of Geneva launched the English version of the [Particle Physics MOOC](#), which introduces to subatomic physics on the Coursera platform, the course was rewarded with an excellent rating of 4.4 on 5.

Alain Blondel (University of Geneva) organized a visit to Japan in May 2017 with the Physiscopes team for the production of a [film](#) illustrating the life in an great experiment (T2K), this activity will continue next year thanks to a grant of the EU.

With Angela Benelli as new Swiss member in the European Particle Physics Communication Network (EPPCN), CHIPP continues its link between the CERN press office and the Swiss media, as well as with the communication offices of the institutes related to CHIPP. The contact has been established and a measure of the [media coverage of particle physics in Switzerland](#) is provided on-line. Many articles are linked there, in particular we would like to point out the article that appeared in "[Le Temps](#)" the 28th December 2017 on the future of Particle Physics research: "L'avenir de la physique des particules en suspens" where professors from the EPFL were interviewed.

Several other interviews of ETHZ professors have been reported in the NZZ, SWITCH Journal, CSCO Journal, Tagesanzeiger on Higgs physics, LHC, [LHC computing](#) and Machine Learning in HEP. The following interviews are on the ETHZ web portal:

- [New "heart" for CERN's CMS experiment](#)
- [High voltage for tomorrow's particle accelerator](#)
- [Persistent and curious](#)
- [Piz Daint is a world leader](#)
- [From the nucleus to CERN or the colours of freedom in particle physics](#)
- [Astronomy has gained a new eye](#)

The EPFL team, working on the LHCb experiment, signed two articles on the LHCb public web page:

- [CP violation in baryon decays](#)
- ["Grand Unification" of data taking: End of data taking for 2017](#)

Several particle physics results and events were covered by [PSI press releases](#), on very different topics like: chip design, CMS pixel, ultra-cold neutrons, axions. Several times they have been contacted by journalists. In particular Klaus Kirch, the 15 November 2017, had an interview published on the NZZ newspaper on the "[Progress in the search for dark matter](#)".

Alain Blondel (University of Geneva) had several interviews during the year 2017: "Why half the universe is missing", published on the MAP platform of the [SCNAT](#) the 2 October 2017.

He contributed to many reports on Baby-MIND in the CERN courier and the Bulletin during the period of construction and when it was transferred to Japan for its installation to the [J-Parc](#) facility :

- Success is a two-way street – [CERN](#)
- Neutrinos take centre stage - [CERN Courier](#)
- Baby MIND moved to East Hall - [CERN](#)
- Neutrino detectors on the move - [CERN Courier](#)
- Baby MIND completes testing at CERN - [AIDA](#)
- Baby MIND born at CERN now ready to move to Japan - [ScienceSpring](#) & [CERN](#)
- Baby MIND takes first steps - [CERN Courier](#)

Hans Peter Beck (University of Bern) was interviewed and several articles were published:

- "TAK_Lounge mit Teilchenphysiker". [Lichtensteiner Vaterland and Volksblatt](#).
- "Zu Gast im TAK: Teilchenphysiker Peter Beck". [Lichtensteiner Vaterland and Volksblatt](#).
- Viewpoint: Reaching out in the era of big science. [CERN courier](#)

Hans Peter Beck hold a genuine success was the [podium discussion](#) at the TAK theatre Schaan, FL with a record number of participants.

Hans Peter Beck, in the context of the IPPOG meeting held there, participated in the [March for Science in Lisbon](#), where he was able to discuss with the Portuguese Minister of Science and Education, Manuel Heitor. HP Beck was also one of the invited speaker at the '[We Scientist Shape Science](#)' event, organized by the Academy of Science in Bern (SCNAT).

Saverio Braccini (University of Bern) hold a public lecture „[Physik am Freitag](#)“ on the application of antimatter and particle physics in medicine.

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