



2016 INFN-IHEP Bilateral Meeting



Status Report on IHEP-INFN Fellowship Program and other Agreements

Scope

■ IHEP and INFN:

- IHEP and INFN signed **two bilateral Agreements** on May 15th, 2015:
 - **the IHEP-INFN Joint Fellowship Program**
 - **IHEP-INFN Microelectronics Joint Projects within the Doctoral School in Electronics of Politecnico di Torino**
- IHEP and INFN established I2JL in 2012
- a large INFN community is frequently hosted by IHEP
- INFN is involved with IHEP in several International Collaborations: JUNO, DAMPE, BESIII, ...
- the mutual cooperation can expand further in the near future, within new Collaborations or new Accelerator Facilities

■ goals:

- support long term of INFN young Researchers at IHEP
- support the INFN-PoliTO Microelectronic Doctoral Subcurriculum

■ means:

- a direct involvement of the IHEP-INFN Joint Laboratory (I2JL)

Scope

- **CAS and INFN (thanks to IHEP!):**
 - CAS and INFN signed on November 16th, 2015:
 - **the CAS-INFN General Framework Agreement**
 - renewal of the existent 2011 CAS-INFN GFA (originally since 2006)
- **goals:**
 - provide a more general ground to I2JL and to present and future IHEP-INFN Agreements expanding the collaboration framework from IHEP to CAS
 - support short term stays (for junior and senior researchers): bidirectional CAS-INFN
- **means:**
 - supporting exchange of information, technologies, and equipment
 - a bidirectional Mobility Programme for young and senior researchers
 - supporting joint projects of experimental and R&D efforts

IHEP-INFN Joint Fellowships Programme

■ IHEP-INFN Fellowship Programme:

- flexible: jointly agreed amendments may occur at any time
- multi-purpose: several Collaboration(s) may have access to the Fellowship Programme
- elastic: number of positions is defined yearly (baseline: 2 position/y/Collaboration)
- joint: funded by IHEP and INFN with 400kCNY/y/Collaboration each

■ fellowships:

- reserved for INFN Post Doctoral Associates (PhD is required)
- provided by IHEP, jointly funded; P.R.C. laws and regulations apply
- duration ranging from 12 months to 3 years maximum
- gross salary: 400kCNY/y, ~ 60k€/y
- net salary (current P.R.C. taxation): ~ 330 kCNY/y (~ 49k€/y, ~ 4k€/m)

■ supported experimental research activities usually take place:

- at IHEP
- at any other P.R.C. experimental site IHEP is involved with
- at any other worldwide site in case of need (joint TBs, ...)

IHEP-INFN Joint Fellowships Programme

Selecting Committees already operational:

■ **Standig members:**

- Prof. Yifang WANG (IHEP, Director)
- Prof. Rinaldo BALDINI (I2JL, Director)
- Mr. Lijung GUO (IHEP, Head of International Affairs)

■ **BESIII:**

- Prof. Xiaoyan SHEN (BESIII, Spokesperson)
- Prof. Marco MAGGIORA (BESIII, EB member – Coordinator BESIIICGEM RISE)

■ **DAMPE:**

- Prof. Shuangnan ZHANG (DAMPE, Spokesperson)
- Dr. Giovanni AMBROSI (DAMPE, Responsible of Si Trackers)

■ **JUNO:**

- Prof. Jun CAO (JUNO, Spokesperson)
- Prof. Gioacchino RANUCCI (JUNO, Vice-Spokesperson)

IHEP-INFN Joint Fellowships Programme

It has already started! The announcement for the first fellowship dates to November 2015
By the BESIII Collaboration...

The screenshot shows the IHEP website with the following content:

- Header:** Institute of High Energy Physics, Chinese Academy of Sciences. Navigation links: Home, Contact, Sitemap, 中文, CAS.
- Menu:** Home | About Us | People | Press | Facilities | Int'l Cooperation | Papers | Research | Education & Training. Date: Thu, May 26, 2016.
- Breadcrumbs:** Location: Home > Join Us.
- Title:** Postdoc position on Hadron Physics related to CGEM detectors at IHEP-Joint IHEP-INFN Fellowships.
- Text:**

The Institute of High Energy Physics (IHEP) of the Chinese Academy of Science (CAS) in Beijing, P.R.C., and the National Institute for Nuclear Physics (INFN) in Rome, Italy, are opening in the framework of their joint Fellowships Program a Postdoc fellow position on Hadron Physics related to the CGEM Inner Tracker (CGEM-IT) of the BESIII spectrometer, hosted on the Beijing Electron Positron Collider (BEPCII) at IHEP.

The BESIII experiment (<http://bes3.ihep.ac.cn/>) has accumulated the world's largest samples of e+e- collisions in the tau-charm region, and has produced many new results in the light hadron spectroscopy, and the spectroscopy, transitions, and decays of charmonium(-like) states; among the others, the discoveries of the charged Zc structures, which, if resonant, cannot be accommodated in the traditional charm quark and anti-charm quark picture of charmonium.

Successful candidate is going to play major role in the development of the algorithms for the simulation and reconstruction of the tracks in the BESIII CGEM-IT, as well as physics analyses and background studies. The INFN group within BESIII is playing a leading role in the design and construction of the CGEM-IT and in the development of the related software and tracking algorithms.

This appointment will be for a period of two years with a possible extension for another one year, up to a total of three years. A candidate will participate to the design and construction phases of the CGEM-IT, and in case of a renewal for the third year of the appointment, to its installation and commissioning, foreseen in the year 2018. Several technical publications related to the CGEM-IT and on the Hadron Physics performed at BESIII are foreseen.

Ph.D in experimental particle or nuclear physics is required.

Extended previous experience in ROOT-, GEANT3- and GEANT4-based Monte Carlo simulations and data analysis, as well as in track reconstruction algorithms development and validation, and C++ programming skills are also required. A previous post-doc experience of at least three years in HEP is appreciated.

The candidate must hold at the time of start of his appointment a Scientific Association to INFN.

The candidate will be expected to travel for short or long term to different INFN sites in Italy, to the Universities of Mainz in Germany and Uppsala in Sweden, and to any other collaborating institute.

The selected candidate:

 - will be offered by IHEP a Post-doctoral Fellowship, in accordance with IHEP's Staff Rules and Regulations;
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The screenshot shows the CAS website with the following content:

- Header:** 中国科学院, CHINESE ACADEMY OF SCIENCES. Navigation links: Contact, Sitemap, Micro-blog, Wechat.
- Menu:** About Us | CAS Institutes | Newsroom | Research | Scientists | International Cooperation | Publications | Resources | Join Us.
- Breadcrumbs:** Home / Join Us / Career Opportunities.
- Title:** Postdoc Position on Hadron Physics Related to CGEM Detectors at IHEP-Joint IHEP-INFN Fellowships.
- Date:** Dec 01, 2015.
- Text:**

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IHEP-INFN Joint Fellowships Programme

The first Researcher started her appointment on March 31st 2016 within BESIII Coll.

The screenshot shows a web browser window displaying the INFN website. The address bar shows 'home.infn.it/en/r'. The page title is 'TO THE ITALIAN PHYSICIST LIA LAVEZZI THE FIRST JOINT FELLOWSHIP IHEP-INFN'. The article is dated 'Published: 06 April 2016'. It features a photo of Lia Lavezzi, a woman with dark hair and glasses, sitting at a desk with multiple computer monitors. The text of the article describes her role as the first joint fellow between IHEP and INFN, her background in physics, and her involvement in the BESIII experiment. The left sidebar contains a 'COMMUNICATION & OUTREACH' menu with various links like 'Communications Office', 'Press Release', 'News', etc. The top navigation bar includes 'HOME', 'THE INSTITUTE', 'STRUCTURE', 'EXPERIMENTS', 'PROJECTS', 'COMMUNICATION & OUTREACH', and 'CAREERS'.

TO THE ITALIAN PHYSICIST LIA LAVEZZI THE FIRST JOINT FELLOWSHIP IHEP-INFN

Published: 06 April 2016

Partita a fine marzo 2016 la prima Fellowship congiunta tra l'*Institute of High Energy Physics* (IHEP) della *Chinese Academy of Sciences* (CAS) e l'Istituto Nazionale di Fisica Nucleare (INFN). Titolare la ricercatrice Lia Lavezzi, associata alla Sezione INFN di Torino e da circa un anno membro della Collaborazione internazionale *BEijing Spectrometer III* (BESIII). Dopo la laurea in fisica all'Università degli studi di Pavia, con una tesi sul doppio decadimento β^+ , e il dottorato presso lo stesso Ateneo, sulle tecnologie di tracciamento per la spettroscopia di alta precisione, ha svolto attività di ricerca come Postdoc presso la sezione INFN di Pavia e la *Facility of Antiproton and Ion Research* (FAIR) a Darmstadt (Germania).

Lia Lavezzi svolgerà un importante ruolo di collegamento, per supportare il trasferimento tecnologico bidirezionale tra l'INFN e l'IHEP nella costruzione del rivelatore *Cylindrical Gas Electron Multiplier Inner Tracker* (CGEM-IT) per lo spettrometro della Collaborazione BESIII, e per rafforzare l'impatto della sua tecnologia innovativa sulla collaborazione con l'IHEP in BESIII del gruppo italiano di ricercatori dell'INFN coordinato da Gianluigi Cibinetto, ricercatore della sezione INFN di Ferrara. In particolare, Lia si occuperà, in collaborazione con i colleghi dell'IHEP, delle modifiche degli algoritmi di tracking e ricostruzione dell'esperimento BESIII, per sfruttare al meglio le potenzialità del rivelatore CGEM-IT. Un rivelatore, quest'ultimo, fortemente innovativo e finanziato prima dal Ministero degli Affari Esteri e della Cooperazione Internazionale (MAECI) nell'ambito del Programma Esecutivo italo-cinese, e poi dall'Unione Europea nell'ambito di Horizon 2020. La sua costruzione, a tecnologia interamente italiana, ed il suo processo di finanziamento sono stati citati durante la recente visita del Ministro dell'Istruzione, dell'Università e della Ricerca Stefania Giannini all'IHEP nel mese di novembre 2015, come un esempio virtuoso e come l'apertura di una nuova fase nella collaborazione scientifica italo-cinese.

Le Joint Fellowship sono posizioni PostDoc erogate dall'IHEP e dall'INFN, previa selezione effettuata da commissioni congiunte, e finanziate al 50% dalle due Istituzioni scientifiche nell'ambito dell'INFN-IHEP *JointLab*, diretto da Rinaldo Baldini, ricercatore dei Laboratori Nazionali di Frascati (LNF).

La Fellowship di Lia Lavezzi si svolgerà anche nell'ambito del progetto europeo BESIII/CGEM, finanziato con circa un milione e mezzo di euro nell'ambito della call RISE del 2014 di Horizon 2020, e coordinato da Marco Maggiora, ricercatore della sezione INFN e dell'Università di Torino. Il consorzio BESIII/CGEM, finalizzato alla costruzione del CGEM-IT come nuovo rivelatore di tracciamento centrale dello spettrometro BESIII, include, oltre all'INFN - con le sezioni di Ferrara e Torino e i Laboratori Nazionali di Frascati (LNF) - e all'IHEP la Johannes Gutenberg Universität e l'Helmholtz Institute di Mainz (Germania), e l'Uppsala Universitet di Uppsala (Svezia).

The IHEP-INFN Doctoral Joint Projects

- **Microelectronics subcurriculum of the PoliTo Doctoral School:**
 - INFN provides to the subcurriculum three new grants per year
 - IHEP support one of these grants per year
 - joint projects related to shared research activities: existing Collaborations but also R&D
 - eligible candidates for the IHEP supported grant: P.R.C. citizens
 - two grants already provided (one directly, one through the program) since A.Y. 2013-2014
 - a candidate from IHEP has already applied to the PoliTO call for the A.Y. 2016-2017
 - a **programme within I2JL, until 2020**
- **Recent (April 2016) extension of the IHEP-INFN Agreement involving PoliTO-UCAS:**
 - PoliTO and UCAS signed Co-Directed Thesis Agreements for the two existing scholarships

The PoliTO-UCAS Co-Directed Thesis Agreements

CO-DIRECTED THESIS AGREEMENT

In consideration of laws and regulations governing the co-operation between public institutions of a scientific, cultural and professional nature and other public or private organisation in Italy and abroad;

In consideration of article 4 of Italian Law no. 210 of 3.7.1998 concerning the regulations on Doctoral courses in Italy;

In consideration of Italian Ministerial Decree no. 224 of 30.4.1999 "Regulations on the Doctoral Research Program";

In consideration of the Regulations on the Doctoral Research Program of the Politecnico di Torino;

In consideration of the Regulations on the Doctoral Research Program of the University of Chinese Academy of Sciences

Between the **Politecnico di Torino**

with registered office in Torino, Italy, Corso Duca degli Abruzzi 24, represented by its Rector, hereinafter indicated as the Institute of Origin

and the **University of Chinese Academy of Sciences (UCAS)**

with registered office in Beijing, P.R.C., 19A Yuquanlu, 100049, represented by its Rector, hereinafter indicated as the Host Institution,

in view of their common intention to promote the scientific co-operation through the mobility of their doctoral students,

it is decreed as follows

I - ADMINISTRATIVE PROVISIONS

Article 1

To come into force in the Academic Year 2015/2016 and remaining in effect for a term of 3 years, a procedure of co-directed thesis is established towards CHAI Junying, hereinafter indicated as the doctoral student, in possession of the university degree in Nuclear Technology and Application issued by University of Science and Technology of China and doctoral student in Electrical, Electronics and Communications Engineering, curriculum of Electronic Devices, at the Politecnico di Torino (Torino, Italy).

2 CDTA signed (on a per-thesis basis):

- Junying CHAI (2014-2017)
- Chongyang LENG (2013-2016)

All matters not provided for in this agreement shall be governed by the Regulation on the Doctoral Research Program of the Politecnico di Torino and by the Regulations of the Host Institutions.



Beijing,

Torino, ...29/03/2016....

Seals of the Institutions, names and signatures:

Prof. Yueliang Wu
Vice Rector of the
University of Chinese Academy of Sciences

Prof. Marco Gilli
Rector of the
Politecnico di Torino



The IHEP-INFN Doctoral Joint Projects

- **Microelectronics subcurriculum of the PoliTo Doctoral School:**
 - INFN provides to the subcurriculum three new grant per year
 - IHEP support one of these grants per year
 - joint projects related to shared research activities: existing Collaborations but also R&D
 - eligible candidates: P.R.C. citizens
 - two grants already provided (one directly, one through the program) since A.Y. 2013-2014
 - a candidate from IHEP as applied to the PoliTO selection for A.Y. 2016-2017
 - a **programme within I2JL, until 2020**
- **Recent (April 2016) extension of the IHEP-INFN Agreement involving PoliTO-UCAS:**
 - PoliTO and UCAS signed Co-Directed Thesis Agreements for the two existing scholarships
 - INFN Tutors on the PoliTO side of the CDTA; IHEP Tutors on the UCAS side of the CDTA
 - similar CDTA will be organic, signed on a per-thesis basis within the I2DJP
 - **significant extension of the IHEP-INFN Agreement**

Research activities supported by the CAS-INFN GFA

- **priority areas:** any joint CAS-INFN research activity, experimental or theoretical
 - High Energy Physics and Nuclear Physics, particularly as regards accelerator technologies;
 - Astroparticle Physics and cosmic ray measurements;
 - IT, High Performance Computing, GRID- and cloud-based technologies;
 - Physics in the space;
 - Nuclear Physics/Accelerator Technologies, including synchrotron radiation and FEL (Free Electron Laser) researches and technologies, to be applied particularly to cultural heritage, hadrotherapy, biomedical imaging and environmental sciences, and nano-sciences and nano-technologies.
 - Exchange of information and technologies;
 - Exchange of equipment;
 - Exchange of junior and senior researchers;
 - Joint projects of experiments and R&D efforts;
 - Organisation of Seminars, symposia and workshops.

The collaboration may be extended to any other activities the Parties may agree upon.

Research activities supported by the CAS-INFN GFA

THE CORE!

Article 3 **Specific Projects**

3.1 Specific projects implementing the collaboration defined in Articles 1 and 2 shall be established in bilateral Memoranda of Understanding between INFN and the relevant CAS Institutes retaining specific competence in the fields listed in Articles 1 and 2.

Signed on November 16th, 2016

IHEP-INFN MoU

- **today the IHEP-INFN MoU is renewed:**

- within the CAS-INFN GFA;
- within the framework of I2JL ;
- **priority activities:**
 - exchange of information and technologies
 - exchange of equipment
 - exchange of senior and junior researchers
 - joint IHEP-INFN Postdoctoral Fellowships
 - joint projects of experiments and R&D efforts
 - organization of seminars and workshops
- **possible addenda on:**
 - scientific projects
 - development and technological transfer
 - advanced training
 - dissemination and education
 - any other activities recognized as useful and coherent with the spirit of the cooperation

IHEP and INFN can safely expect many more years of exciting collaboration!!

Thank you!

IHEP-INFN Fellowships Spares

A flexible Fellowship Programme

- **IHEP-INFN Fellowship Programme:**

- flexible to cope dynamically with existing research challenges
- flexible to catch new opportunities
- jointly agreed amendments may occur at any time

- **every year IHEP and INFN agree on:**

- which Collaboration(s) may have access to the Fellowship Program
- the composition of the Selection Committee(s)
- the exact number of the positions available, the baseline being two annuities per year per Collaboration

- **strengthening I2JL with a Common Fund:**

- set within I2JL to support the program
- funded by IHEP and INFN with 400kCNY each, 800kCNY total, per year, per Collaboration

Baseline

- **it's a joint program:**
 - shared financial effort: 50%-50%!
- **two annuities (24 months) available each year per Collaboration:**
 - 1y + 1y positions available each year, or
 - 1y position available each year and 2y position available every 2y
 - each position can be renewed up to a total of 3y
- **characteristics:**
 - reserved to INFN Post Doctoral Associates (PhD is required)
 - positions provided by IHEP
 - funded by the Common Fund
 - P.R.C. laws and regulations apply
 - gross salary: 400kCNY/y, ~ 60k€/y
 - net salary (current P.R.C. taxation): ~ 330 kCNY/y
(~ 49k€/y, ~ 4k€/m)
 - housing assistance from IHEP

Research activities within the Fellowship Programme

- **any joint IHEP-INFN experimental research activity:**
 - building and commissioning new Spectrometers
 - building and commissioning detectors for existing Spectrometer's upgrades
 - feasibility studies for new Detectors, Spectrometers or Facilities
 - data analysis
 - simulations
 - developing or optimisation of advanced tools
(detectors, computing, computing infrastructures, ...)
 - ...
- **supported experimental research activities usually take place:**
 - at IHEP
 - at any other P.R.C. experimental site IHEP is involved with

Selection Committee(s)

- **independent Selection Committee for each Collaboration:**
 - asynchronous management of the selection for the different Collaborations
 - may easily cope with the specific needs of the Collaboration
- **each Selection Committee is composed of:**
 - standing members:
 - representing IHEP: Director of IHEP (or a representative)
 - representing INFN: Director of I2JL (or a representative)
 - IHEP administrative expert
 - non standing members:
 - Collaboration Spokesperson
 - an Italian member of the EB or of the IB/CB of the Collaboration
- **each Selection Committee is:**
 - jointly appointed by IHEP and INFN every 2 years
 - can be renewed

Selection

- **eligible candidates:**

- experimental Physicists
- PhD is required
- holding Scientific Association to INFN

- **the Selection Committee:**

- recommends new candidates to IHEP
- may recommend renewal of existing contracts (up to a total of 3y)

Researchers' Status

■ **Researchers status:**

- appointed by IHEP as PostDoctoral Fellows, within P.R.C. laws and regulations
- associated by INFN as INFN Scientific Associates

■ **Contracts:**

- minimum duration: 12 months
- average duration: 1y or 2y
- maximum total duration: 3y

■ **Salary:**

- gross salary: 400kCNY/y, ~ 60k€/y
- may be indexed
- gross salary must include insurance, accounting for family obligations as well

Support to Research Activities

■ **Eligible expenses for Research Activities:**

- travel and living expenses when not at IHEP or at the originating INFN site
- hardware and software
- technical instrumentation and tools
- Conference and Workshop fees
- participation to detectors' building or upgrade
- ...

■ **Independent support:**

- IHEP is free to support eligible expenses within its regulations
- INFN is free to support eligible expenses within its regulations

Researcher's obligations

■ **Place of work:**

- the Researchers will spend most of their time at IHEP or at the experimental sites of the involved Collaborations

■ **Seeking CAS support:**

- each Researcher *must* apply to the CAS program supporting foreign Researchers at IHEP
- failure to submit the application may result in contract termination
- an application properly submitted but rejected does not affect the contract validity or duration

Costs attribution

■ **Salary:**

- 50%-50%, through the I2JL common fund
- IHEP and INFN commit to support each Fellowship for its whole duration

■ **Research Expenses:**

- INFN supports travel expenses to/from IHEP at start/end of the appointment, unless application to the CAS program has been successful.
- IHEP and INFN are free to support directly and independently eligible research expenses according to their regulations.

CAS-INFN GFA Spares

The CAS-INFN Mobility Programme

Part of the CAS-INFN Agreement

■ Short visits:

- up to 3 months, can be repeated in an year
- multiple sites (CAS/INFN) in one single visit are now allowed
- 20 months per side per year

■ Researchers status:

- while at INFN: Scientific Association
- while at CAS: Visiting Scientist
- medical and insurance coverage provided by hosting institution

■ Costs and support:

- hosting institution: 600RMB/day up to 21 days (~ 90€/day), 12kRMB/month for longer stays (~ 1800€/month)
- sending institution: travel expenses