IUPAP International Union of Pure and Applied Physics

C11 Commission of Particles and Fields

Vera Lüth
Chair of C11

ICSU - International Council of Science

27 Unions
73 Nat. Scientific Members

IUPAP - International Union of Pure and Applied Physics

20 Commissions

C11 - Commission On Particles and Fields

13+3 Members

NC – National Contacts

55 contacts
+35 via ICTP

ICSU's Mission

ICSU mobilizes the knowledge and resources of the international science community to:

- Identify and address major issues of importance to science and society.
- Facilitate interaction amongst scientists across all disciplines and from all countries.
- Promote the participation of all scientists—regardless of race, citizenship, language, political stance, or gender—in the international scientific endeavour.
- Provide independent, authoritative advice to stimulate constructive dialogue between the scientific community and governments, civil society, and the private sector.

IUPAP - C11

Commission on Particles and Field

Members Oct. 2002 – Oct. 2005

V. G. Lüth	USA	Chair
A. Smith	U.K.	Vice Chair
M. Turala	Poland	Secretary
C. Fosco	Argentina	
R. Godbole	India	
G. Herten	Germany	
T. Huang	China	
E. Iarocci	Italy	
A. Sissakian	Russia	
S. Stapnes	Norway	
G. Wormser	France	
T. Yamanaka	Japan	
M. Zeller	USA	

Associate Members

E. Zas	C4
D.-O. Riska	C12
A. McDonald	C19

C11 Activities

- Oversight and sponsorship of two international conferences,
  i.e. ICHEP and LP in alternate years
- Guidelines for meetings and assistance in international contacts
  Recommendation on LP Format (2001)
  Recommendation on ICHEP Format (2004)
  The program is the responsibility of the organizers and the Advisory committees!
- Other Activities: WG on Authorship

C11 Sponsorship - Tradition of more than 40 Years

Past Conferences

ICHEP - 94	Glasgow
LP - 95	Beijing
ICHEP-96	Warsaw
LP - 97	Hamburg
ICHEP - 98	Vancouver
LP - 99	Stanford
ICHEP - 00	Osaka
LP - 01	Rome
ICHEP - 02	Amsterdam
LP – 03	Batavia
ICHEP - 04	Beijing

Future Conferences

LP - 05	Uppsala
ICHEP - 06	Moscow
LP - 07	Daegu
ICHEP - 08	Philadelphia

Conference Program – Can we do better?

- In the interest of engaging the world, conferences are now hosted by university groups in many countries, not by major labs, guidance and oversight important!
- Revised Concept for Int. Advisory Committee: Consultation very important!
  - Choose members carefully – change membership from year to year
  - Consult extensively on program and speakers
  - Find ways to engage younger people
- Program should emphasize new results and give perspective
  - LP: only plenary talks, but not all talks should be reviews!
  - Previous year's program may not be suitable for next year's!
  - Introduce some plenary topical sessions with shorter talks on more limited, but new exciting developments

    This provides opportunities for younger physicists!
  - Future developments are important, but the future changes slowly, so avoid annual repetition!
  - Some accelerator, detector, grid talks are fine, but shouldn't we be selective!
- Attract younger participants
  - Poster sessions should be planned and advertised, with invited topics! Should be a

    May be C11 will award a prize for posters?
  - Organize some special events for younger participants
- If they are to continue, we need to adapt to changes! Your help is welcome!

C11 Working Group on Authorship

- As Collaborations supporting major experiments grow, authorship of publications is becoming more and more of an issue (in the minds of some!)
- What is the impact of growing Authorlists ?
  - they do not appropriately credit those who have contributed most
  - they include names of many who are not very knowledgeable about the contents of the publication
  - they do not allow others to identify those most knowledgeable
  - they lead to absurd publication and citation records
- C11 formed a WG to
  - Examine current practices in HEP and other fields
  - Explore potential modifications and alternatives
  - Prepare an interim report submitted to C11 for discussion – are we ready to bring this to HEP community ?
- What are the next steps – Consensus will be impossible to achieve!

  May be not now, but the need for change may become evident!

C11 Working Group on Authorship

- Members

  Hiro Aihara, Lorenzo Foa, Jacques Chauveau, Dmitri Denisov, Hans-Ake Gustafsson, Gregor Herten, Max Klein, Vera Lüth (chair), Pippa Wells, Jack Sandweiss, Steinar Stapnes, Daniel Whiteson, Taku Yamanaka

WG on Authorship : Types of Publications

- Publications of physics analyses – All Members
  - signed by all eligible members of the collaborations:
- Contributions to conference proceedings – Single Author
  - in the form of write-ups of an invited talk by an individual, usually representing the collaboration.
- Physics notes – Few Selected Authors
  - Most collaborations document physics analyses in great detail in internal reports prepared by a small group of scientists: LHC experiments hope to publish reviewed physics notes.
- Technical publications - Few selected Authors
  - covering detector design, construction and operation, as well as advances in electronics, data acquisition, computing and software

WG on Authorship : Common Current Practice

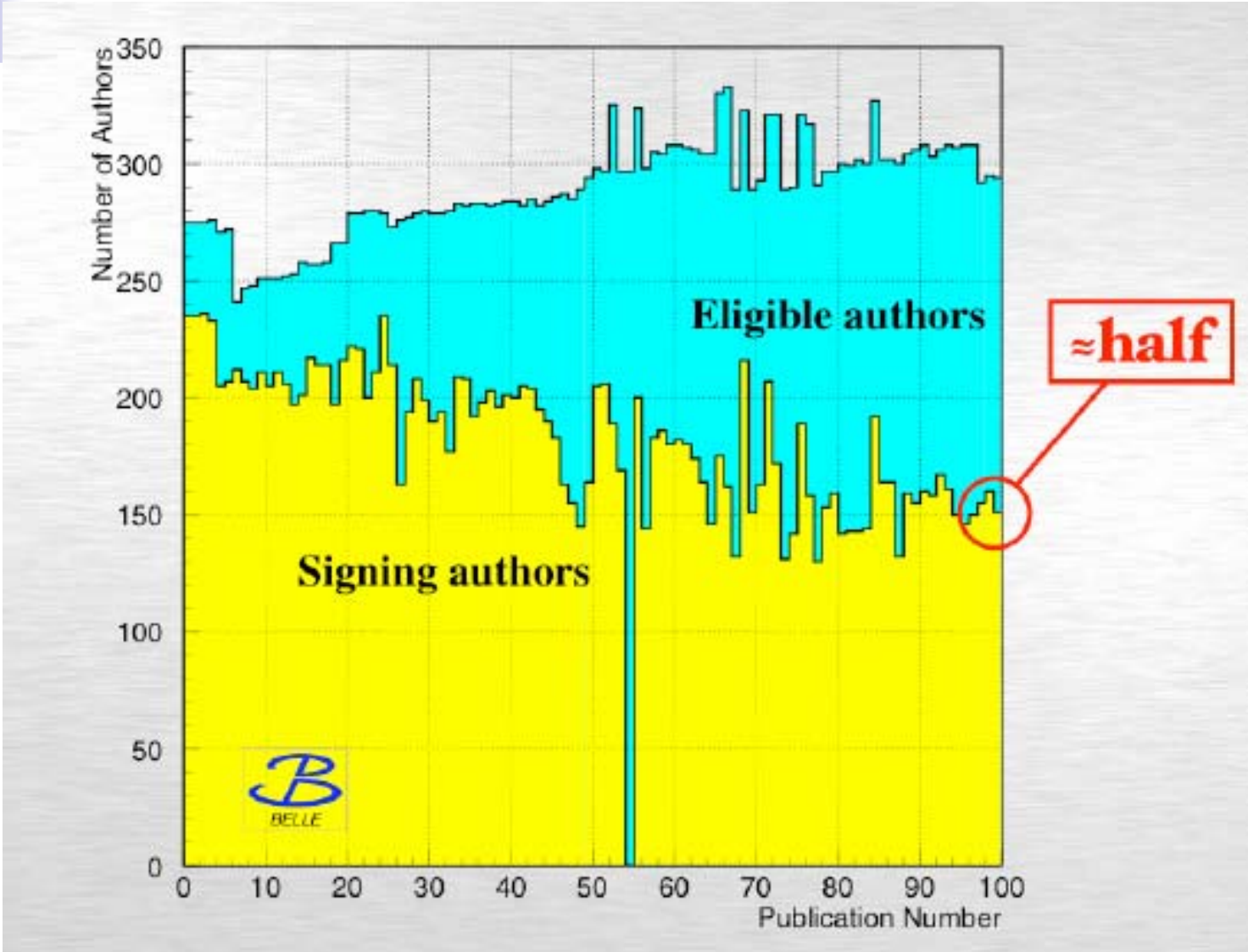
- Currently, the larger HEP collaborations have 200 – 600 members., this will grow to 2000 at LHC
- Authors are generally required to have been members and contributed to the experiment for at least six months or one year.
- Current policies reflect the high energy physics tradition that detector design, construction, and operation is performed by the same team of physicists that also performs the physics analyses
- Publications thus are the outcome of joint efforts by the collaboration, not just the few individual scientists who initiate and perform a specific analysis and arrive at the result.
- Questions:
  - Can this practice be extended to Collaborations with 2000 scientists?
  - Does this form of collective authorship meet the rules for authorship?
  - How do we define significant contributions?
  - How do we recognize contributions to physics as well as technical innovation and support??

1st Alternative: Belle Practice

- The Belle Collaboration
  - 300 scientists from 56 institutions in 13 countries
- Prior to the publication members of the collaboration are asked to confirm their authorship by responding to the following:

  Please include me in the author list: YES/NO
  - YES - I have read this paper and I agree with its contents
  - NO - I have read the paper, I do not agree with its contents
  - NO - I have not made sufficient contributions to this paper
- Belle allows for up to three primary authors who will be listed first, in order chosen by the analysis group. While 90% of the first 30 publications had an alphabetically ordered author list, only 10% of the most recent 30 papers had authors listed in alphabetical order.
- This practice meets the approval of Belle members!

Belle Practice: Number of Authors vs time



2nd Alternative – Partition of Collaboration

- Partition the collaborations into 10-15 Consortia,
  - probably along the lines defined by analysis working groups (AWG), with all scientists participating in one, in some cases two, and in exceptional cases several working groups.
- AWGs specialize in different areas of physics,
  - develop common analysis tools, meet regularly, and report progress and problems.
- AWG leaders interact frequently Collaboration Leadership
  - with the physics coordinator, the computing and software teams as well as the detector operation teams.
- The federated publication oversight by the collaboration remains
  - through its publication board and analysis coordinators, review Committees
- A sign-up for authorship like Belle
  - would allow individuals to decide case-by-case whether their contribution truly justifies authorship.
- Lead authors would be listed first
- A practice like this could reduce the author list by a factor of 10 or more.

Discussion of Alternatives to Current Practice

- Belle Practice: sign-up for authorship – lead authors
  - Authors are more knowledgeable, take responsibility for publication
  - Reduced authorlist was achieved with-out reglementation from above
  - Emphasizing lead authors is considered attractive, leads to special recognition
  - Primary authors allow readers to identify contacts
  - Emphasis on analysis over contribution and innovation in software and hardware has not been a major issue !
- Partition of Collaborations in Physics Analysis Consortia
  - Partition along physics topics exists!
  - The active participation of more than a 50 - 100 scientists in the preparation of a publication is probably not practical anyway
  - Would coupling of WG to authorship lead to friction and competition, neglect of common tasks? Lead to friction and fission?
  - A longer list of primary authors could include for recognition of also those who made technical contributions or consulted on physics
  - Would the partition be a de-facto restriction in authorship?
  - A selective authorship may apportion credit in a more balanced, but less uniform way

Conclusions

- At this time, all existing collaborations have rules in place – some already for many years – that regulate membership and authorship. A change of the rules is considered painful, and in the eye of many unnecessary, possibly damaging to the spirit of the collaboration.
- However, practices could develop from current to new after first few years of operation
- The working group suggests that C11 distribute a questionnaire to the large collaborations and major research laboratories. The purpose of such a questionnaire is to sample the community's response to various options for authorship discussed here.
- C11 of IUPAP cannot and will not establish rules and expect the community to accept them,
- Nevertheless C11 hopes to raise conscientiousness of this issue.

Farewell and Thanks to Uppsala - LP-05

- **An Excellent Smørgasbrod of physics**
- **Beutiful facilities, great organization, and support by the Uppsala team under the leadership of Tord Ekelof**
- **Many thanks – you all made this a memorable event!**

Farewell –
See you in Moscow
@ ICHEP-06

http://ichep06.jinr.ru/

Visa Problems – US/Japan/Europe

- In view of the threat to national security and competition in scientific and technology developments many countries have revised procedures and policies for visa approval. These have impacted many foreign scientists, from students to laboratory directors.
- While there have been denials of visa to HEP physicists from India collaborating with KEK, most of the problems are related to US visa.
- Though US Visa procedures have been streamlined in the past two years, there still have been denials of visa to bona fide students and scientists.
- Leaders of the major US science organizations (> 40) filed a 2nd petition this year, pointing out the impact of the current practices and suggesting
  - Extension of the validity of the Visa Mantis security clearances from two years to the duration of the appointment
  - Permission to renew visa in the US, rather than outside, and thus guaranteeing a reentry visa prior to departure.
  - Passports be returned to applicants while application is being processed
  - Renegotiation of visa reciprocity agreements with countries such as China and Russia to permit multi-entry visa
  - Amend need for students to prove intent to return to home
  - Develop global strategy to promote academic and scientific exchange
- Given the general improvements, IUPAP will again sponsor conferences in the USA, but applicants need personal invitations 3 months ahead.

WG on Authorship : Practices in Other Fields

- ALICE at LHC:
  - 1000 scientists from 86 institutions.
  - They plan to adopt the same practice as HEP
- The LIGO Scientific Collaboration (LSC)
  - 400 members from 41 universities.
  - author list of scientific publications includes all members of the LIGO Scientific Collaboration with rights to the data. including engineers who contributed in a major way to the design, construction, or operation.
  - LIGO has published eight physics papers, plus a larger number of technical papers signed by those involved in the particular work.
- The Sloan Digital Sky Survey (SDSS)
  - 200 scientists from 14 universities.
  - They distinguish four types of publications with different author lists:

    1. scientific publications signed by those directly involved in the data analysis as well as any members of the technical team who built the telescope;
    2. data release papers, same as other scientific publications, but a different team of scientists who analyzed the data;
    3. technical papers signed by those directly involved in the technical work; and
    4. follow-up papers on public data by a few authors with reference to SDSS.As of now more than 100 scientific publications have appeared in print, the typical number of authors varies between 30 and 50
- The Human Genome Sequencing Consortium
  - 2000 authors at > 100 institutions
  - a variety of practices and members have reported that the responses have not always been positive.
  - For some of the major publications 200 primary authors, selected from among the team leaders