Report from the Speakers' Bureau

CALICE Collaboration Meeting
March 29th, 2023

François Corriveau
on behalf of the Speakers' Bureau

CALICE Speakers' Bureau

Role

Manage <u>Publications</u> (Analysis Notes and Papers)

 Set up Editorial Boards, Indico pages and follow the review process

Participation to <u>Conferences</u>

 Before: call for contributions, organize speakers, rehearsals, distribute slides or posters

 After: review proceedings, collect documents, update web pages

Organization of <u>Analysis Meetings</u> every ~2-3 months if possible

<u>Others</u>

Composition

Jerry Blazey (NIU)	√	
Vincent Boudry (LLR)	√	
Wataru Ootani (Tokyo)	√	
François Corriveau (McGill)	√	Chair
Frank Simon (MPP)	√	ex-officio as IB Chair
Roman Pöschl (LAL)	√	ex-officio as Spokesperson

meet once or twice a year
 last: January 2022
 next: TBD

Speakers' Bureau Webpages

https://twiki.cern.ch/twiki/bin/view/CALICE/SpeakersBureau

CALICE Results

Papers accepted or submitted for publication and Analysis Notes with preliminary results.

🔴 ### CALICE Theses
up to date

Several theses have been written using CALICE data. These should NOT be regarded as official CALICE results, but are the responsibility of the students concerned.

🔑 CALICE Internal Notes

Results shown in these Internal Notes are for internal use by the Collaboration. See CaliceGroup topic for further details.

🔴 ### CALICE Conference Talks
up to date

CALICE talks and posters presented at conferences.

See Also: CALICE Posters (before 2009)

Posters presented at conferences before 2009.

🔴 ### Membership of Editorial Boards
up to date

Current status of Editorial Boards for CALICE Analysis Notes and CALICE Papers.

Forthcoming Conferences

Forthcoming/recent conferences (not updated).

Theses

https://twiki.cern.ch/twiki/bin/view/CALICE/CaliceTheses

TWiki > ■ CALICE Web > SpeakersBureau > CaliceTheses (2023-03-23, FrancoisCorriveau)

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CALICE Theses

The following theses have been written using CALICE data. These should NOT be regarded as official CALICE results, are the responsibility of the students concerned but also do contains lots of information of interest!

Ph.D. Theses

- Phi Chau Optimierung von hochauflösenden Sampling-Kalorimetern mit szintillatorbasierter SiPM-Auslese (Mainz U.; 2022)

- Daniel Heuchel Particle Flow Studies with Highly Granular Calorimeter Data (Heidelberg U.; 2022)

- Shubham Pandey Performance of High Granularity Calorimeter prototypes for the CMS HL-LHC upgrade in beam test experiments at CERN (IISER, Pune; 2022)

- Olin Lyod Pinto Shower Shapes in a Highly Granular SiPM-on-Tile Analog Hadron Calorimeter (Hamburg U.; 2022)

- Amine Elkhalii Analog Hadronic Calorimeter for a Future Linear Collider (Wuppertal U.; 2020)

- Yuan Zhenxiong A Low-Power Silicon-Photomultiplier Readout ASIC for the CALICE Analog Hadronic Calorimeter (Kirchhoff Inst. Phys.; 2020)

etc..

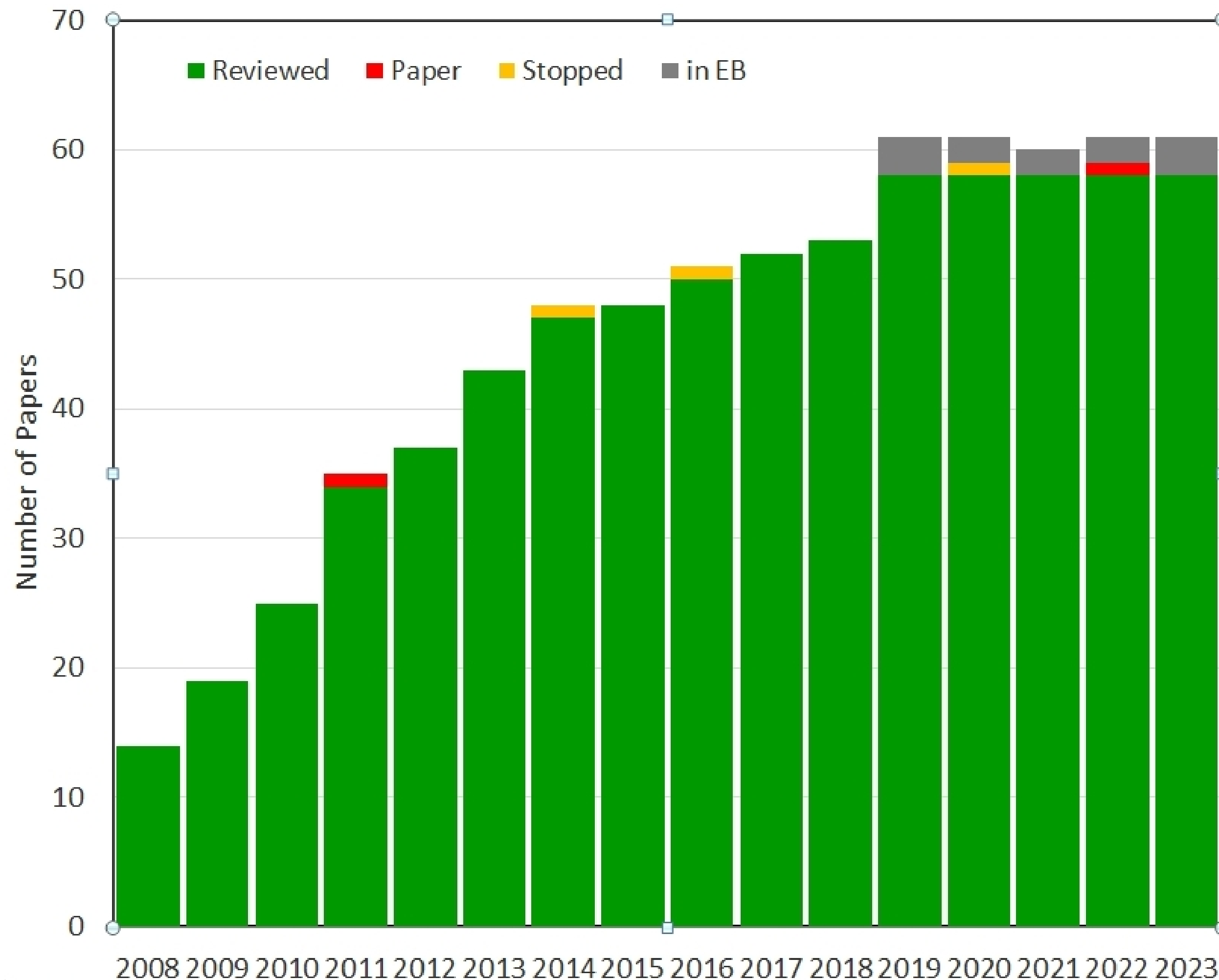- Christian Graf Towards Precision Time and Energy Measurements in Highly Granular Hadronic Calorimeters (Munich, Tech. U.; 2020)

37 theses were added since last time, now there are 66, ..more?

Groups are strongly encouraged to submit CALICE-related theses here !

Analysis Notes

https://twiki.cern.ch/twiki/bin/view/CALICE/EditorialBoards

58 available
  3 on hold/stopped
  2 turned into papers
  1 in EB (#61)
  1 in EB+review (#63)
  1 new for EB (#66)

Although nowadays one often goes directly to a publication, groups are strongly encouraged to write down notes on their current work, also as incentives for papers.

A New Analysis Note (#66)

.. has just been submitted:

## Software Compensation for Highly Granular Calorimeters using Machine Learning

by Jack Rolph

Abstract:

In this note, a method for Software Compensation using machine learning is proposed. The method is designed to overcome biasing to the particle energy range, a common feature of many data-driven software compensation algorithms. The method obtains superior resolution than a standard control method ('local software compensation') in both simulation and 2018 June Testbeam data. It is also demonstrated to be unbiased to the training range of energies. The inclusion of timing information is found to improve the performance of the algorithm. The model is also demonstrated to learn additional energy reconstruction techniques, such as leakage correction.

An EB will be constituted soon.

Papers

Papers
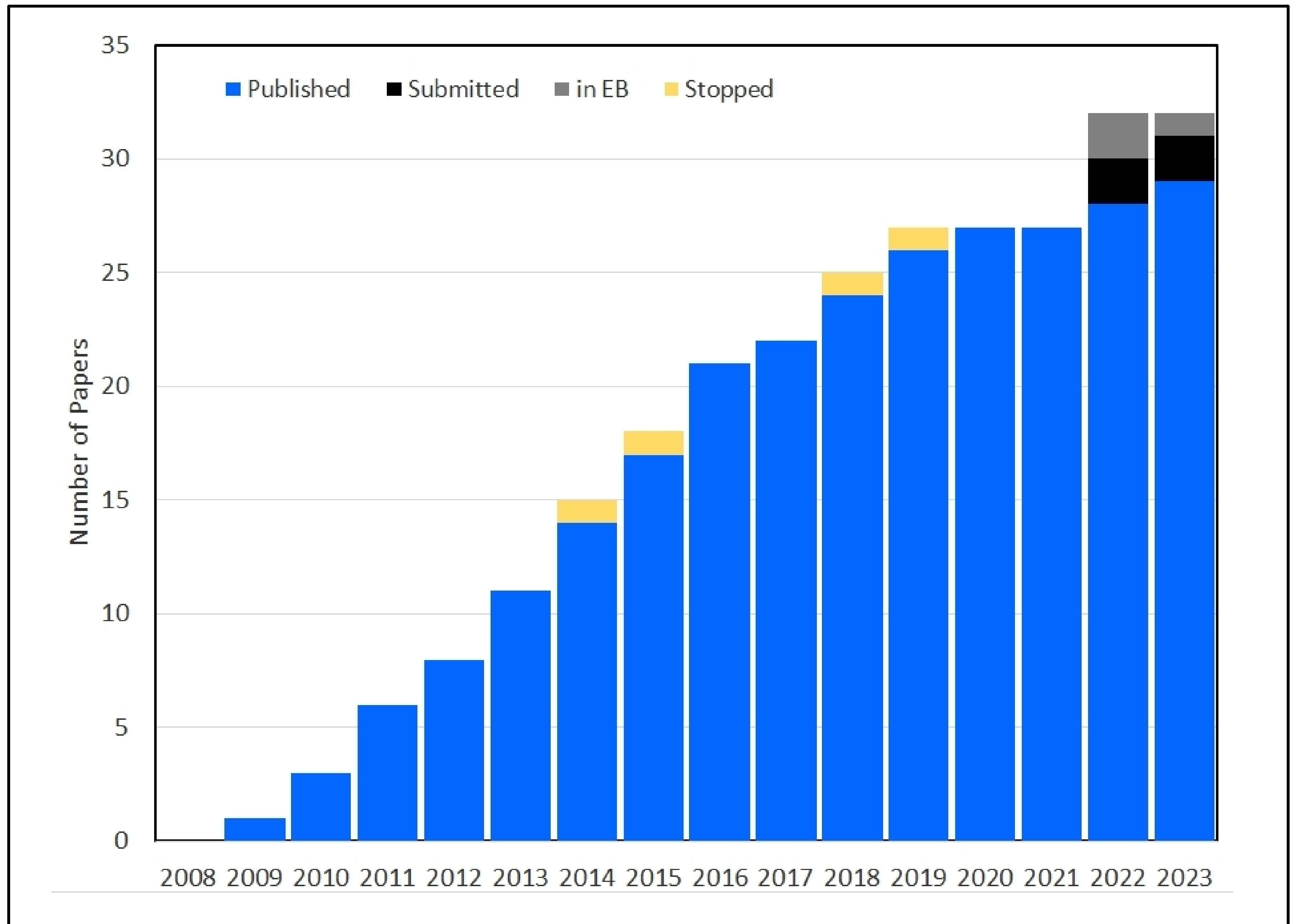
https://twiki.cern.ch/twiki/bin/view/CALICE/EditorialBoards

29 published
4 on hold/stopped
2 submitted
1 in EB

Board		Authors	Title	
Paper031 -> CALICE-PUB-2020-001	Fouz, Cvach, Simon	Liu, Laktineh, Yang	Particle ID in SDHCAL using BDT	Link to drafts
Paper032 -> CALICE-PUB-2022-001	Fouz, Cvach, Simon	Liu, Laktineh	Hadron Energy Reconstruction in SDHCAL using BDT	Link to drafts
Paper033 -> CALICE-PUB-2022-003	Kawagoe, Grenier, Corriveau	Krüger, Sefkow	AHCAL Technological Prototype	Link to drafts
Paper034 -> CALICE-PUB-2022-002	Chadeeva, Sicking, White	Boumediene	Description and stability of SDHCAL	Link to drafts
Paper035	Zerwas, Sefkow, Peitzmann	Krüger	HGCAL+AHCAL Performance	Link to drafts
Paper036	Takeshita, Bilki, Irles	Garcia	SDHCAL Angular Performance	Link to drafts

Status of Papers

Paper033 – **AHCAL** – *Design, Construction and Commissioning of a Technological Prototype of a Highly Granular SiPM-on-tile Scintillator-Steel Hadronic Calorimeter.*
　　arXiv 2209.15327, (to be) submitted to JINST

Paper034 – **SDHCAL** – *Description and stability of a RPC-based calorimeter in electromagnetic and hadronic shower environments.*
　　arXiv 2207.06291, published in 2022 JINST 18 P03035

Just published.
Congratulations to Djamel et al.!

Paper035 – **AHCAL+HGCAL** – *Performance of the CMS High Granularity Calorimeter prototype to charged pion beams of 20–300 GeV/c.*
　　arXiv 2211.04740, (to be) submitted to JINST

Paper036 – **SDHCAL** – *Analysis of the incident angle effect in the energy reconstruction of hadrons with the SDHCAL technological prototype.*
　　currently in EB

Conferences

2022   participation to 10 events with 26 contributions (there were 8 events and 33 contributions in 2021)

- CEPC 2022 (Nanjing/IHEP, China, October 24-28, 2022, virtual)   2 talks
- ECFA Workshop 2022 (DESY, Germany, October 5-7, 2022, in-person)   1 talk, 2 posters
- TWEPP 2022 (Bergen, Norway, September 19-23, 2022, in-person)   -
- ICHEP 2022 (Bologna, Italy, July 6-13, 2022, in-person)   3 talks (14 abstracts submitted
- NDIP 2020 (Troyes, France, July 4-8, 2022, in-person)   1 abstract submitted
- NewTrends 2022 (Kiev, Ukraine, June 26 - July 2, 2022, postponed)   *postponed*
- PM 2021 (Isola d'Elba, Italy, May 22-28,2022, hybrid)   1 talk
- CALOR 2022 (Sussex, UK, May 16-20, 2022, hybrid)   10 talks
- QM 2022 (Krakow, Poland, April 4-10, 2022, hybrid)   -
- VCI 2022 (Vienna, Austria, February 21-25, 2022, virtual)   1 video
- BTTB 2022 (Lecce, Italy, January 31 - February 4, 2022, virtual)   2 talks
- LP 2021 (Manchester, UK, January 10-14, 2022, virtual)   1 talk, 1 poster/video
- HEP 2022 (IAS Program, January 13-19, 2022, virtual)   1 talk

25-26

Conferences

2023

- TWEPP 2023 (Sardinia, Italy, October 2-6, 2023) Abstract submission deadline: April 30, 2023.
- TIPP 2023 (Cape Town, South Africa, September 4-8, 2023) Abstract submission deadline: April 15, 2023.
- PSD 2023 (Oxford, England, September 3-8, 2023)
- Low-x 2023 (Leros, Greece, September 3-8,2023)
- QM 2023 (Houston, USA, September 3-9, 2023) Abstract submission deadline: May 1, 2023.
- EPS 2023 (DESY, Germany, August 21-25, 2023) Abstract submission deadline: June 2, 2023.
- LP 2023 (Melbourne, Australia, July 17-21, 2023) Abstract submission deadline: March 18, 2023.
- FCC Week 2023 (London, England, June 5-9, 2023) Abstract submission deadline: June 3, 2023.
- FAST 2023 (Elba, Italy, May 28 - June 1, 2023) Abstract submission deadline: May 14, 2023.
- LHCP 2023 (Belgrade, Serbia, May 22-26, 2023) Poster abstract submission deadline: March 20, 2023.
- LCWS 2023 (SLAC, USA, May 15-19, 2023) Abstract submission deadline: March 15, 2023.
- CHEP 2023 (Norfolk, England, May 8-12, 2023) Abstract submission deadline: November 28, 2022.
- BTTB 2023 (DESY, Germany, April 17-21, 2023) Abstract submission deadline: March 12, 2023.
- TREDI 2023 (Trendi, Italy, February 28 - March 2, 2023) Abstract submission deadline: January 30, 2023.
- HEP 2023 (Valparaiso, Chile, January 1-13, 2023) Abstract submission deadline: December 14, 2022.

Outlook

Collaborative R&D is the core of CALICE.
Diffusion of results are its expression to the community.

There are many ways for members to contribute to the reach of CALICE:

take part in technical/analysis meetings,

participate to workshops and conferences
present/discuss methods and results,

write down technical/analysis works
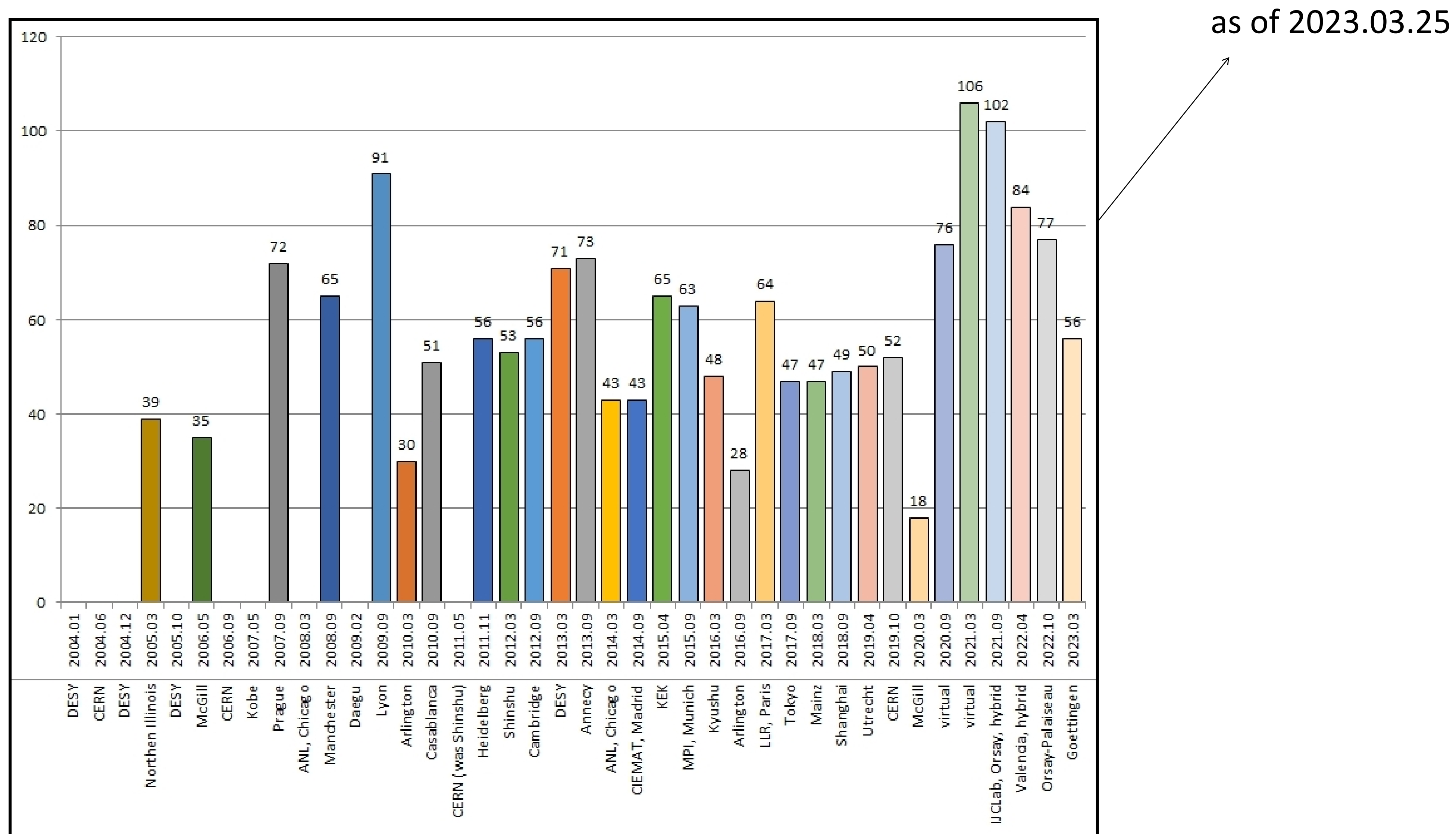in the form of theses, notes and publications.
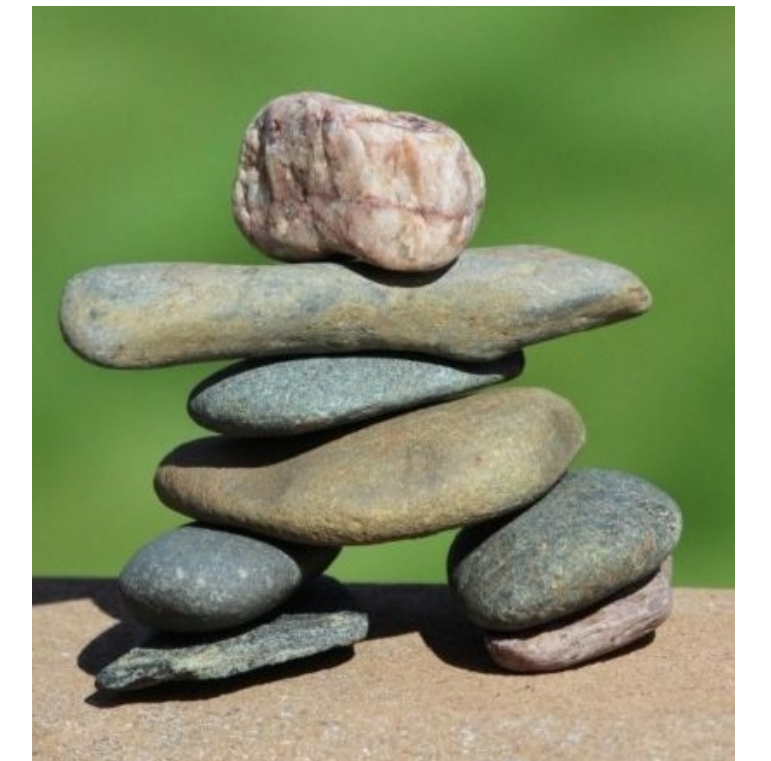
The role of the CALICE Speaker's Bureau is to facilitate.
We welcome inquiries and suggestions for improvements.

Extras

CALICE Collaboration Meetings

as of 2023.03.25

MC-based Papers

Three such papers by CALICE collaboration members have been recently proposed.
They are MC-based, <u>not</u> using CALICE data and thus justifying limited authorships:

"Time assisted energy reconstruction in a highly granular hadronic calorimeter",
C. Graf and F. Simon.   https://arxiv.org/abs/2203.01317, published in JINST 17 P08027.

"Machine-learning-based prediction of parameters of secondaries in hadronic showers
using calorimetric observables", M. Chadeeva and S. Korpachev. May 2022.
https://arxiv.org/abs/2205.12534

"Generation of Artificial Neutral Hadron Showers in A Highly Granular Calorimeter using
Cycle-Consistent Neural Networks", J. Rolph, E. Garutti and G. Kasieczka. A draft exists,
the AHCAL geometry is used. Status?

CALICE is favorable to such initiatives and appreciates being made aware of them via the
Speakers Bureau in order to resolve any potential conflict and satisfy collaboration rules.

Analysis Meetings

Analysis meetings between collaboration meetings are back on since 2020:

~4-6 presentations each time, with attendance of ~30 participants.

This is an excellent forum for exchange on current issues towards completion of analyses → publications, or special topics.

https://agenda.linearcollider.org/category/158/

5 analysis meetings since May 2020:

2020 - May, July, December
2021 - June
2022 – February

The meeting of July 2022 had to be cancelled for lack of presentations (only one), despite reminders.

The next should take place early December 2022

Analysis Meetings

minutes/comments added

A.O.B.'s

To-do list for the Speakers' Bureau and the CALICE Management:

- Finalize the CERN e-groups for CALICE. Some institutes have not responded.

- Retire JISCMAIL for CALICE ?

- Update the CALICE author list. The last official one stored is from 2016.

Those items are highly correlated ($\rho \approx +1$).

- Re-vamp the CALICE webpage