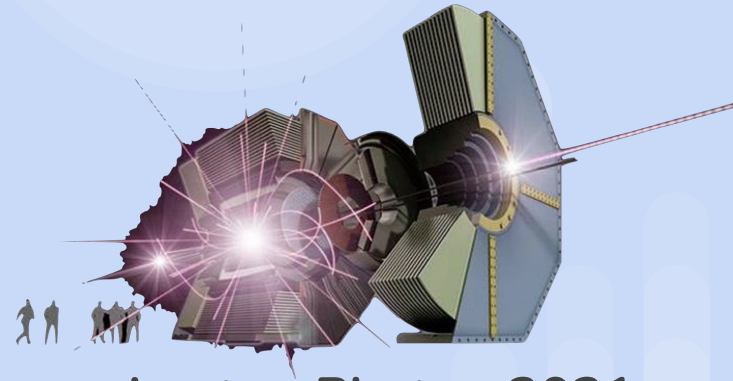


Diversity and Inclusion at Belle II

Hannah Wakeling
(She/Her/They/Them)

McGill University
on behalf of the Belle II Collaboration

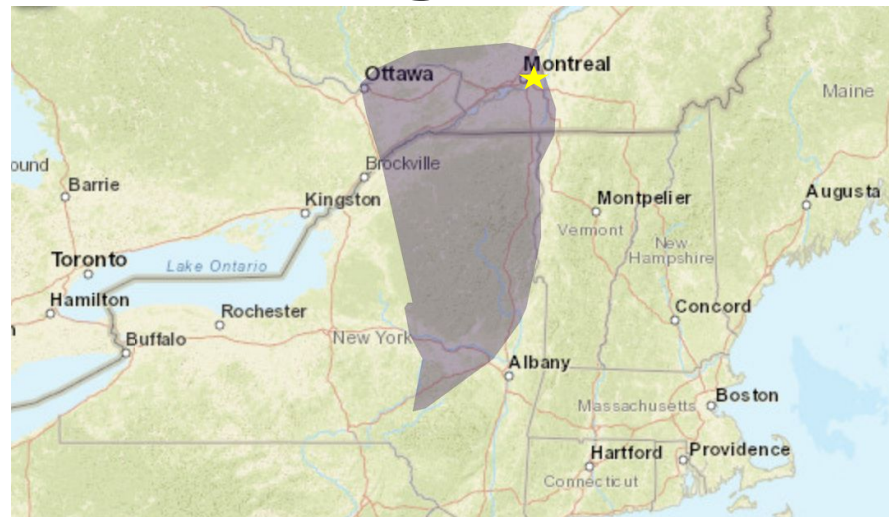
hannah.wakeling@mail.mcgill.ca



Lepton Photon 2021
12th Jan 2022

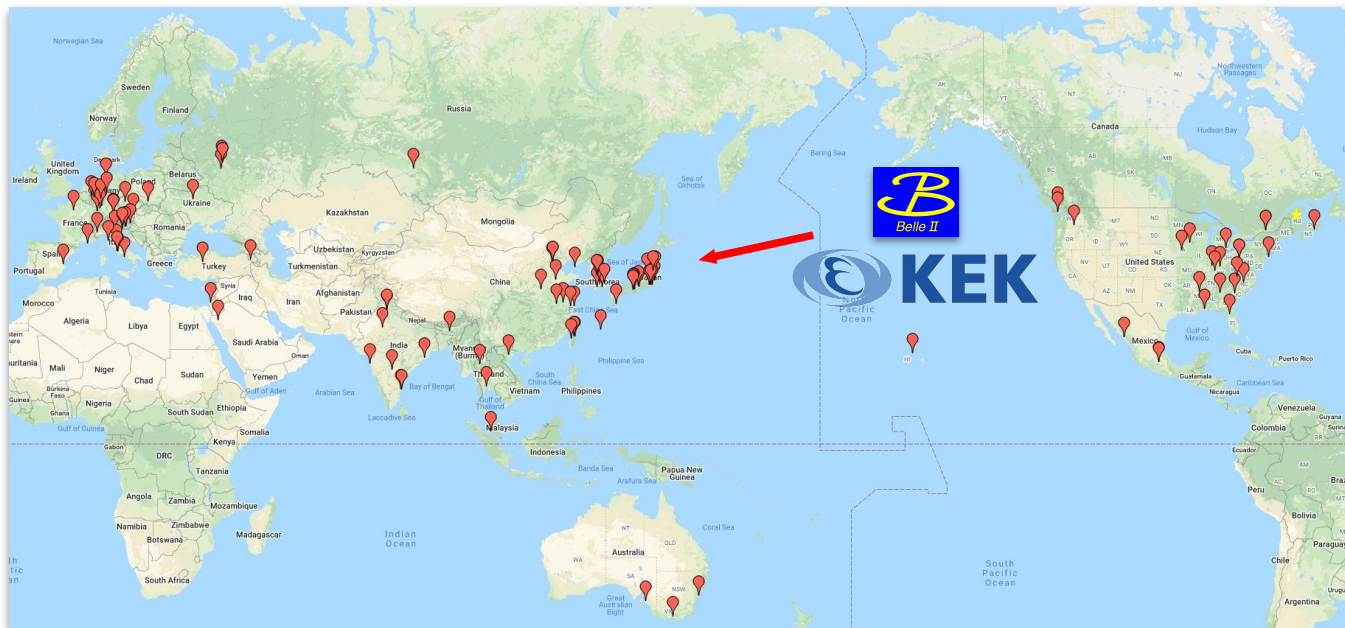
Traditional Territory Acknowledgement

McGill is situated on unceded, Kanien'kehá:ka traditional territory. This means that this land was taken, not paid for or given by the Kanien'kehá:ka people.



This site has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. Through this acknowledgement I hope to respect the diverse Indigenous peoples connected to this territory on which I work and live in today.

The Belle II Collaboration



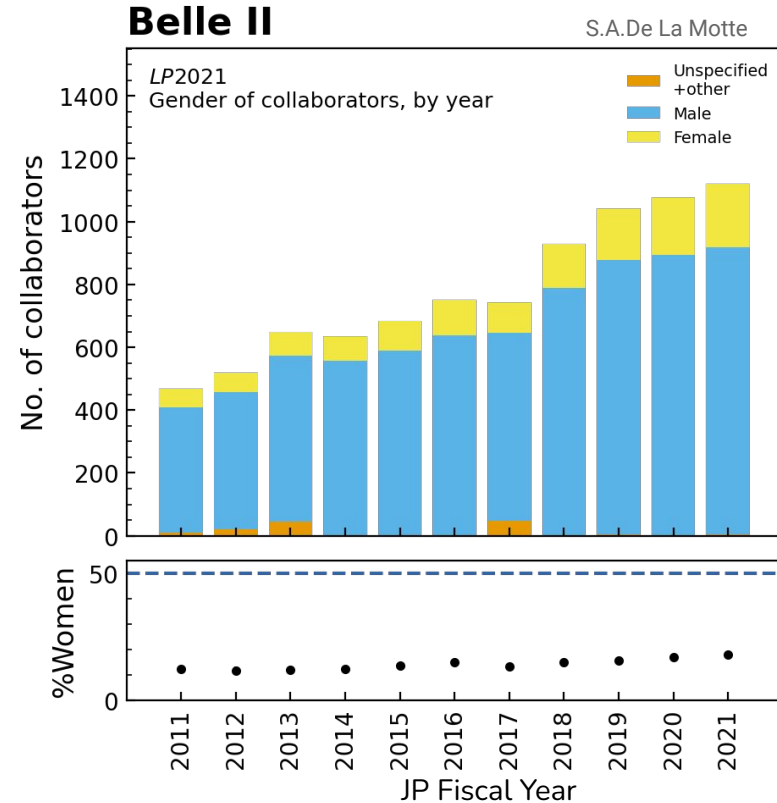
Belle II is a detector at SuperKEKB, a B Factory experiment, based in Tsukuba, Japan.

Today over 1000 members, institutions spread across 4 continents!



Collaboration demographics

- The gender gap in physics is one of the highest in science.
- The gender gap at Belle II is on par with the rest of physics - distinctly and disappointingly 'normal'.
- Belle 2 membership data 2011-2021
 - Percentage of people that are women within the collaboration is increasing each year by 0.57% on average: 12.2% in 2011 to 17.9% in 2021
 - Acknowledge the issues in the way data is often collected, with respect to a gender binary.

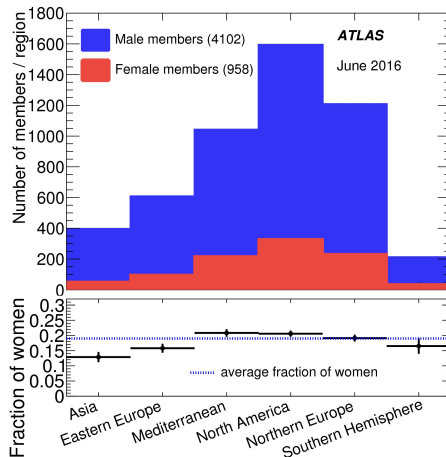


*In 2017 Belle II switched to a new membership management system, some information for 2017 is incomplete, valid for all plots

Collaboration demographics

- Data is grouped to ensure anonymity
- Different regions show different representations
- Inspired by ATLAS' "Studies related to gender and geographic diversity in the ATLAS Collaboration"

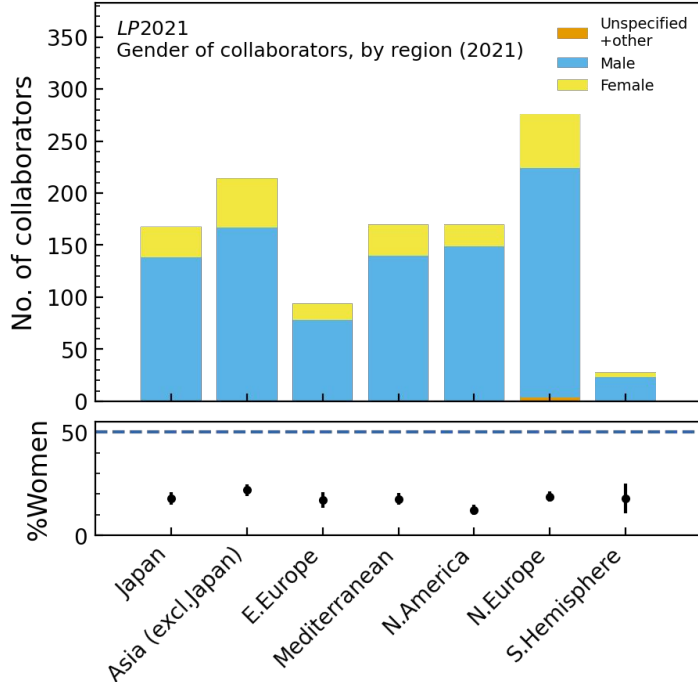
(ATL-GEN-PUB-2016-001)



Belle II

S.A.De La Motte

N = 1120



Gender of collaborators by region

*Region definitions can be found in the backup slides

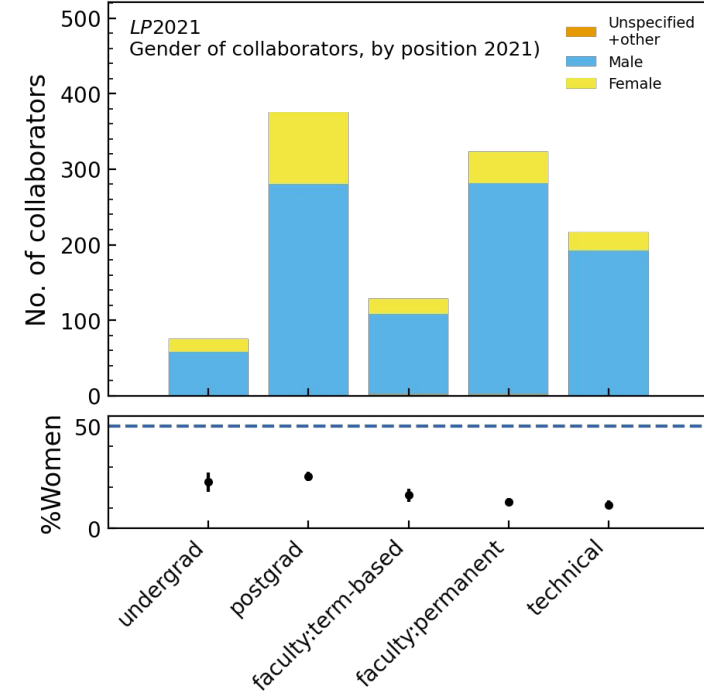


Collaboration demographics

- Percentage of collaborators that are women **drops** as their career progresses from postgraduate to permanent faculty.
- We are not exempt from the coined (and problematically termed) ‘leaky pipeline’ effect for permanent faculty, however some of what we see is leftover from earlier generations!
- The largest drop in gender representation is between high school and university, therefore we can work on encouraging women into undergrad and postgrad physics programs and making sure the environment is healthy for them.

Belle II

S.A.De La Motte N = 1120



Gender of collaborators by position

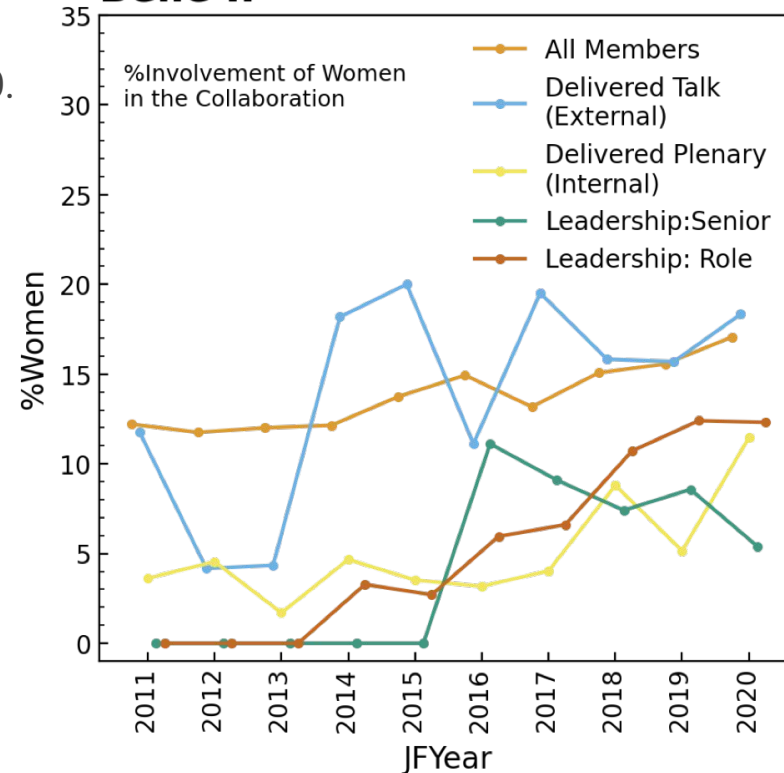
Representation within the collaboration

- Yearly data collected on the percentage of womens' recognized involvement in the collaboration up to 2020.
- Overall upwards trend - not enough for proportional gender representation in the near future.

Category (2020)	#People	%People (in Collab)	#Women	%Women (in Involvement)
All Members	1078	100	184	17.1
Delivered Talk (External)	56	5.29	10	17.9
Delivered Talk (Internal)	96	8.91	11	11.5
Leadership: Senior	37	3.43	2	5.41
Leadership: All Roles	130	12.1	16	12.3

Belle II

S.A.De La Motte





Belle II Code of Conduct

- Belle II includes a code of conduct within its bylaws [1] which was added in October 2017
- 2 Diversity Officers appointed to promote an inclusive environment within the collaboration and to provide a safe and confidential point of contact
- The code of conduct enshrines principles related to research practice and also fostering a diverse and inclusive collaboration:

“The Belle II collaboration is committed to fostering an open, diverse, and inclusive working environment that nurtures growth and development of all, and believes that an array of values, interests, experiences, and cultural viewpoints enriches our learning and our workplace. Thus, members shall not engage in violent, harassing, sexist, racist, or discriminatory behaviour.”

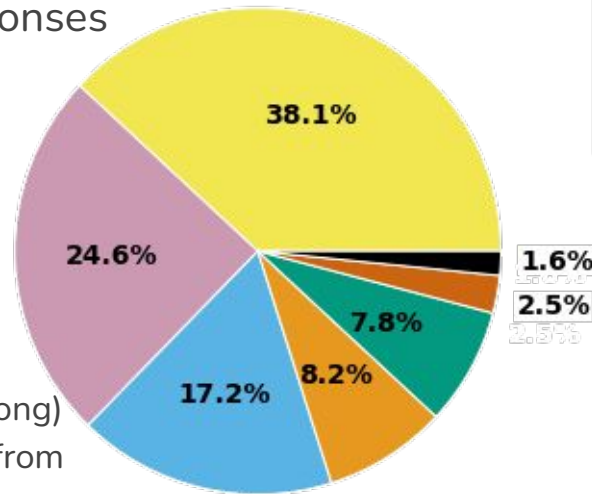
Extract from the *Belle II Code of Conduct*

<https://belle2.jp/diversity/>

[1] <https://confluence.desy.de/download/attachments/34997090/Belle%20II%20bylaws.pdf>

Belle II membership survey

- Belle II conducted a membership survey in 2018.
 - Inspired by survey conducted by LHCb.
- It took ~6 months to get responses from ~240 collaborators.
- Students were particularly elusive when trying to get them to respond to the survey.
 - **Reasons could include:**
 - Lack of motivation to (it was long)
 - Individuals being identifiable from demographic information.
 - Reluctance or inability to give information via google forms.

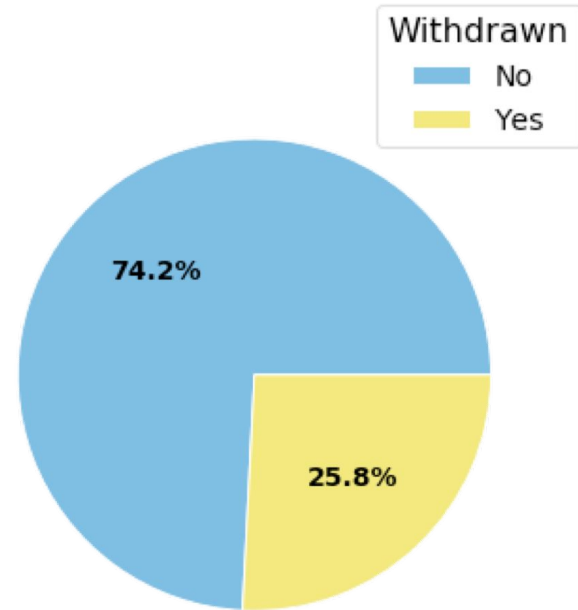




Belle II membership survey

An example of the insight we have with the questions:

- “Have you ever withdrawn from consideration for a leadership role at Belle (implicitly or explicitly) because of the impact it would have on your family life?”



Social Media

- Belle II is active on Facebook, Twitter, and Instagram.
- Use social media to raise awareness of events including:
 - International Women's Day,
 - International Day of Women and Girls in Science,
 - International Day for the Elimination of Racial Discrimination,
 - International Day of LGBTQ+ People in Science Technology Engineering and Mathematics,
 - Colo(u)r Blind Awareness Day.



Belle II Collaboration
7 September 2019 · 🌐

John Dalton was a physicist, chemist, and meteorologist who was born on the 6th of September 1766; colour blind himself, he made some of the first scientific studies of colour blindness. "Daltonism", in fact, was one of the first names for red-green colorblindness, the most common form of the visual impairment. The 6th of September is now designated as #ColourBlindAwarenessDay, recognizing the vision deficiency that impacts approximately one in twelve men, and one in 200 women. Today #Belle2 members are considering the display screens we have in our control room, and the graphs and histograms we make for our analyses, to make them as accessible as possible to people with colour blindness.





Making our language inclusive

- Our computing and software groups have taken steps to remove or phase out words that cause harm and offense to people

You're able to do it yourself!

Git has removed 'master' from its default branch setup - it is possible for you to fix your old ones too! It's this simple:

```
> git branch -m master main  
> git push -u origin main
```



Belle II during COVID-19

- Belle II had to rapidly change our data production setup due to COVID-19
- Even with everything we were still able to continue collecting data through partial-remote control, and actually broke the worlds' instantaneous luminosity record thanks to the hard work of the local and remote workers! This year we broke the integrated luminosity collected in 1 week record!
- Belle II provided some food (snacks and ready meals) in the control room and one of the office buildings.
 - To show appreciation for shifters.
 - To reduce need for people to visit supermarkets.
- Some social events (e.g. end of run party) held via Zoom.



Belle II during COVID-19

- FULLY remote Belle II collaboration meetings held since the beginning:
 - the only other time this happened was in 2011 after the Great East Japan Earthquake
 - Collaboration split between multiple time zones - always at a bad time for someone.
 - Meetings at unsocial hours may be more of a burden for those with dependents.
 - Recordings and session replays helped but cannot fully ameliorate issue.
 - Some meetings were split into two sessions to allow presenters to choose a friendlier time slot, often a fair split between Asia, Europe and Northern America friendly time zones.



Initiatives at the KEK laboratory

KEK is very receptive and dedicated to the issues that are coming to light.

- The Belle II secretariate worked to make childcare easier to find
- KEK is working on improving bathroom accessibility
 - A gender neutral, accessible bathroom has been made available this year in the experiment control room (previously only a male toilet was conveniently available).
 - Has recently improved the dormitory bathroom provision for women.
- Belle II members help out with proofreading some English versions of documents and webpages at KEK.
 - Often Japanese-English translations and/or cultural connotations evolve quicker than KEK document revisions. There may be archaic or outdated terms, e.g. for medical terminology that KEK are working to improve.
- Asking external providers for more variety in available food options at KEK.
 - Reluctance as vegetarian options don't sell well.

Initiatives at the KEK laboratory

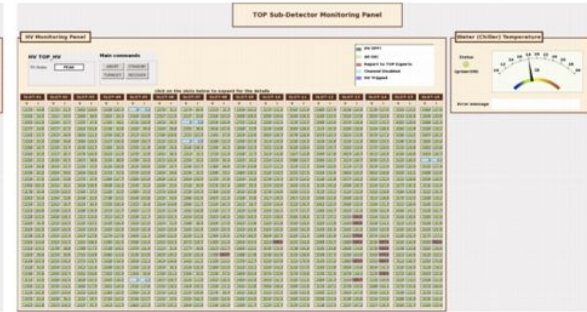
KEK is very receptive and dedicated to the issues that are coming to light.

- Colour blind friendly screens in our Control Room!

TOP GUI (Normal):



TOP GUI (Red-Weak/Protanomaly):



TOP GUI (Green-Weak/Deutanomaly):



TOP GUI (Blue-Weak/Tritanomaly):





Initiatives and goals

- We would like to continue raising awareness within the collaboration
 - More social posts, emails, normalising making things accessible
- Raise awareness of unconscious biases.
 - Can we provide links to training or courses on identifying these biases?
- Be more visible!
 - Currently: Diversity plenary during every close out session of collaboration meetings
 - Currently: Diversity parallel session every collaboration meeting
 - Aim to have diversity topics mentioned at the beginning of meetings/workshops
- COVID-19 and video conferencing best practices
 - Recommending camera on (at least whilst talking) for facial cues
 - Being understanding of mental health



Thank you

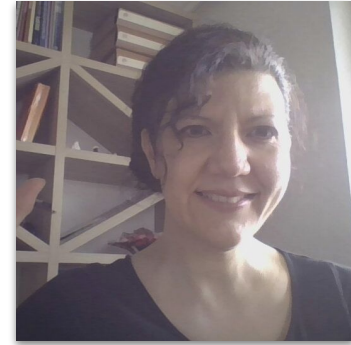
We would like to not only better our collaboration to make it a more inclusive space, but to work together with the wider community to better the field of Physics as a whole.

We would love to hear suggestions, and share our ideas.



Backup - Belle II Diversity Officers

- In October 2018 Belle II created the positions of two diversity officers.
- The diversity officers exist to:
 - Promote an inclusive environment within the collaboration;
 - Provide a safe and confidential point of contact for any collaborator to report any issues, particularly those related to discrimination, bullying, or harassment within the collaboration;
 - Ensure that persons from marginalised groups are appropriately considered for positions of responsibility in the collaboration and are supported in their careers;
 - To encourage and publicize the collaboration's events and efforts promoting equity.



Elisabetta Prencipe



Matt Barrett

Thank you to Kay Kinoshita and Matt Barrett for the data collection that has made this talk possible.



Backup - Resources for Colour Blind Friendly Plots and Displays

Colour blindness simulators

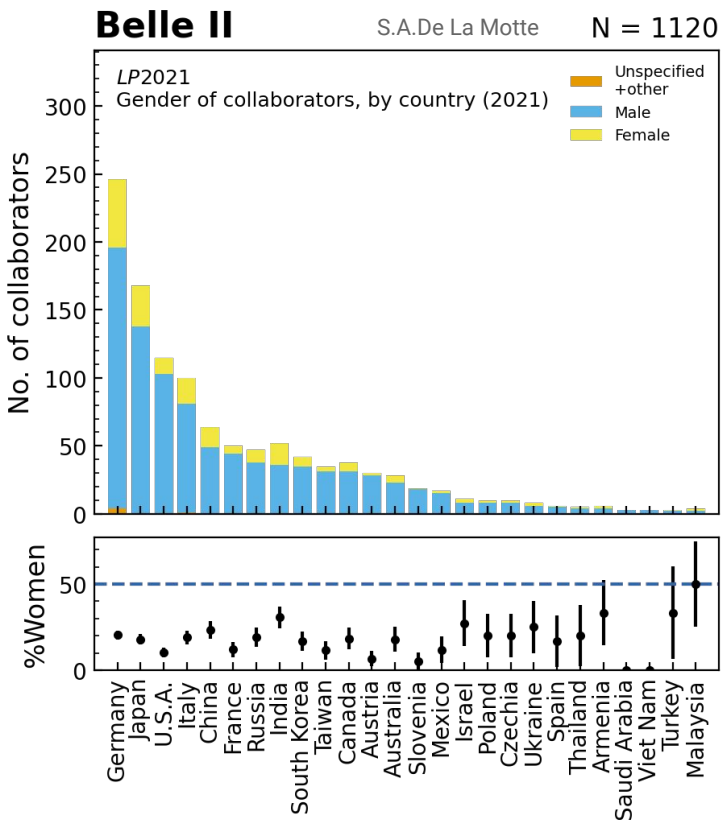
- There are a number of websites and apps that can be used to show how a image may look to a person with different types of colour vision deficiency, for example:
 - www.color-blindness.com/coblis-color-blindness-simulator/
 - www.colourblindawareness.org/colour-blindness/colour-blindness-experience-it/

Colour blind friendly plotting

- There are also a number of websites that help you choose a colour blind friendly colour scheme for your plots and displays, for example:
 - ifly.uni-koeln.de
 - colorbrewer2.org

Original	Simulation			Hue	for Photoshop, Illustrator, Freehand, etc.			for Word, Power Point, Canvas, etc.
	Protan	Deutan	Tritan		C,M,Y,K (%)	R,G,B (0-255)	R,G,B (%)	
1				Black	-°	(0,0,0,100)	(0,0,0)	(0,0,0)
2				Orange	41°	(0,50,100,0)	(230,159,0)	(90,60,0)
3				Sky Blue	202°	(80,0,0,0)	(86,180,233)	(35,70,90)
4				bluish Green	164°	(97,0,75,0)	(0,158,115)	(0,60,50)
5				Yellow	56°	(10,5,90,0)	(240,228,66)	(95,90,25)
6				Blue	202°	(100,50,0,0)	(0,114,178)	(0,45,70)
7				Vermilion	27°	(0,80,100,0)	(213,94,0)	(80,40,0)
8				reddish Purple	326°	(10,70,0,0)	(204,121,167)	(80,60,70)

Backup - Additional collaboration demographics

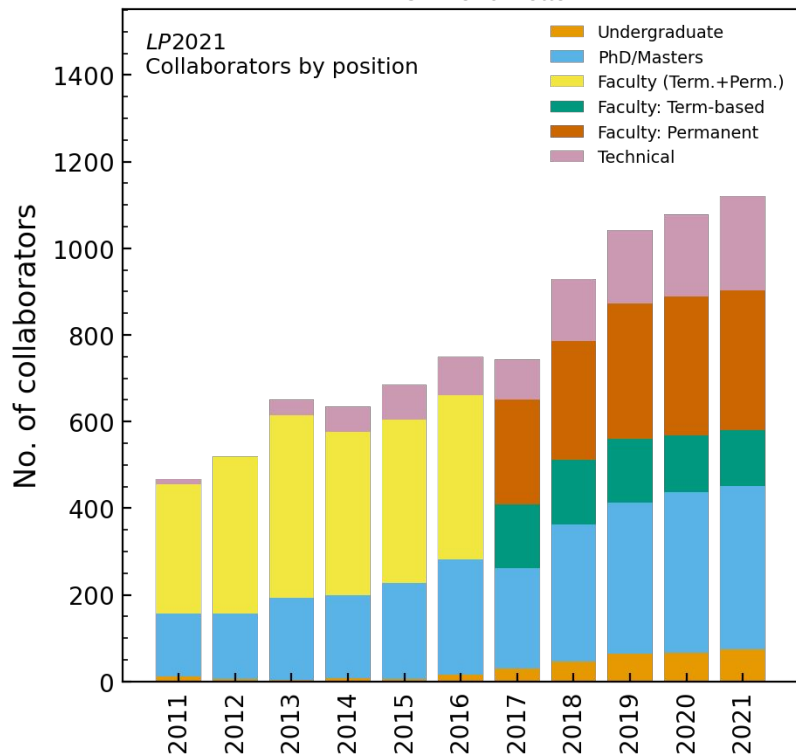


Gender of collaborators by country

Backup - Additional collaboration demographics

Belle II

S.A.De La Motte



Position of collaborators by year



Backup - Support for LGBTSTEM Day

- Belle II became an official supporter of LGBTSTEM Day in 2019.
 - Only supporter based outside of Europe and North America*.
- Social media posts in support of LGBTSTEM Day in both English and Japanese.

We encourage other (Japanese)
research institutions to support ready for
November 2021!



Belle2実験

5 July 2019 · 🌐

本日2019年7月5日は科学、技術、エンジニアリング、および数学におけるLGBT+Peopleの第2回国際デーです。

Belle IIコラボレーションは、この国際デーのオフィシャルサポーターであることを誇りに思っています。

私たちはLGBT+ コラボレーターを支持し評価します。そして私たちはBelle IIを人々の個性を大切にする安全ですべての人を受け入れるコラボレーションにすることを約束します。

#Belle2 #LGBTSTEMDay

*Depending on how IceCube and DES are counted.