

# Belle II Masterclasses

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Select Particles

Particles

Charge **-1**

Type **muon**

Histogram

Histogram

Title **mu neg Mass**

Number of bins **40**

Min: **0**

Max: **5**

Variable **mass**

Belle II Masterclass

Number of events: **10000**

First event: **0**

Data Source **hadron-1**

Print particle list? **No**

Particle List

Combine 2 particles

1. Particle

2. Particle

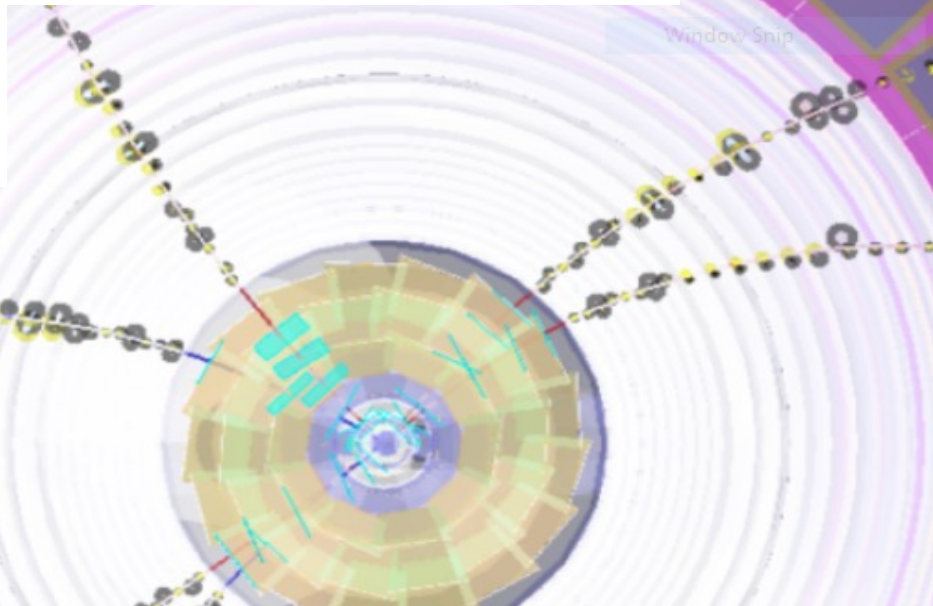
Same particle lists? **No**

New Particle **J/psi**

Min mass [GeV]: **1**

Max mass [GeV]: **4**

Histogram



**MASTERCLASS**  
Belle II Particle Adventure

# BELLE II IMC IN 2022

Back to live masterclasses (1/2 still online) – 216 students

- ❖ The events announced through IMC and Belle II collaboration channels
  - ❖ **Europe** - 3 events with a final video conference
  - ❖ 1 planned event for Japan cancelled due to Covid

	Institutes	Participants
Mar. 7 2022	4	90
Mar. 16 2022	4	71
Mar. 23 2022	3	75

- ❖ Tutorial , Jan.25 @Belle II General Meeting,
  - ❖ **Question time**, Mar.2
- ❖ Video conference with live connection to Belle II control room – live earthquake during 2<sup>nd</sup> VC.
- ❖ Quiz: own application and voting system – allows group ranking.
- ❖ FPCP2022 event @ Uni. Mississippi



# BELLE II - EXERCISES

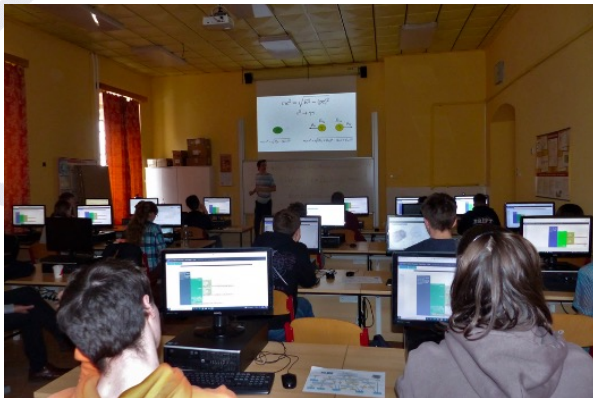
Two exercises – Choose one or do both:

❖ Spectroscopy – search for new particles 10 MEvents

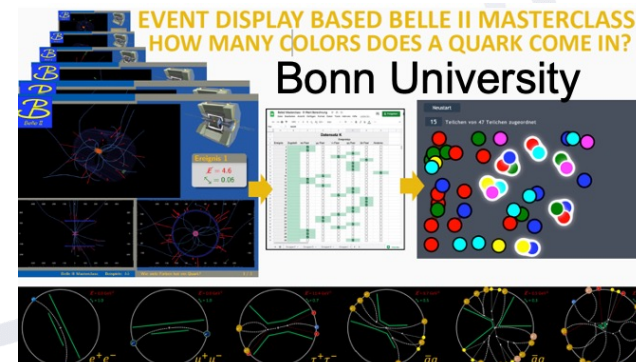
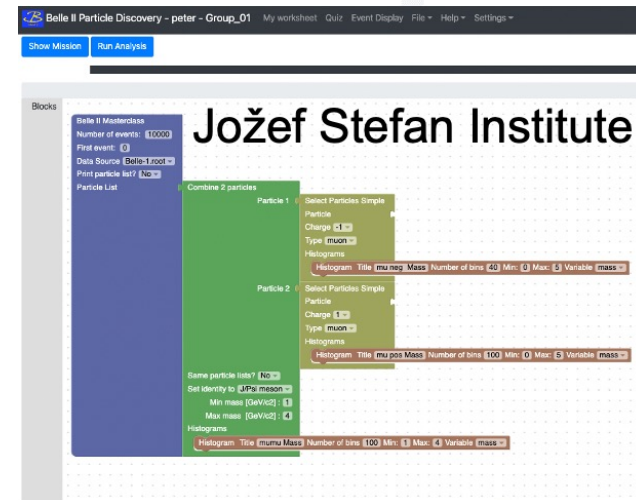
- <https://belle2.ijs.si/masterclass/>
- Online server
  - able to handle more than 250 parallel users
- Event display added (not used before)

❖ **New in 2022:** Measure quark colors

- similar to LHC experiments
- <https://belle2.ijs.si/public/home/quark-colors/>
- Limited sets of events



2022:  
7x exercise (old)  
2x exercise 2 (new)  
1x both



# FPCP 2022 OUTREACH

Report from Jake Bennett, main organizer

## FPCP masterclass at the University of Mississippi

- Following FPCP2022 at the University of Mississippi
- Public event, advertised on campus, in Oxford, and to high schools in the region
  - Held on Friday afternoon from 3-6 pm
  - About 25 “students”
  - Brief introduction (slides and particle cards activity) and then two “masterclass morsels” on Minerva and Belle II
  - Coupled with QuarkNet (teacher training program) workshop on Saturday to discuss particle lifetimes
- Overall very well received!
- Hope to leverage this experience to join/lead a larger masterclass event in the future



# PLANS

- **March time slot overlap with:**
  - CERN IMC
  - Final exams approaching for last year high school students
  - STEM olimpiades
  - Is there an interest to move the event to September/October ? Your opinion/position very welcome
- **Organize IMC in Japan and in the US**
  - takes some effort from participating institutes.
  - Shall we appoint JP and US coordinators/ promoters?
- **Enable prospective students to take part in the exercises through the year**
  - Improvements in the documentation – short videos
- **Active participation of sites in the development – SEARCHING FOR VOLUNTEERS!!**
  - Upgrades in the Belle2Lab exercise:
  - Tutor page: easier selection of results
  - Admin: webs setup of the events
  - Kahoot quiz : is this an alternative to our quiz? Anybody with an experience?

