



# Innovations at QuarkNet

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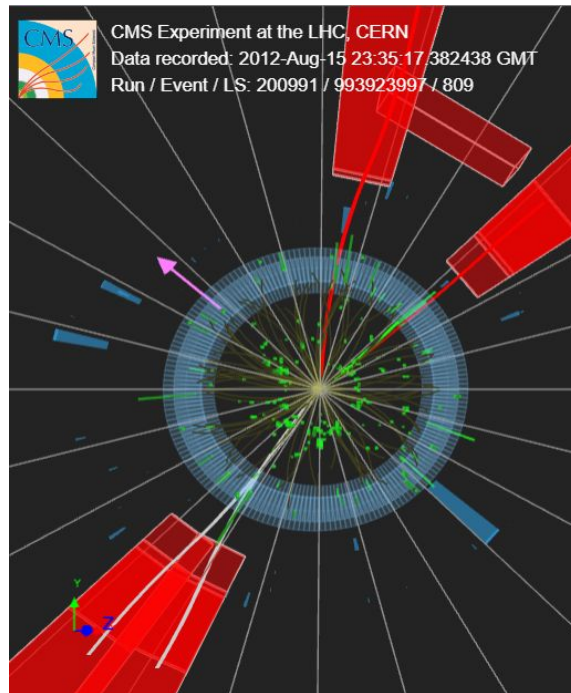
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# What are we doing?

- **Masterclasses → IMC Steering Group**
  - Improved iSpy
  - Java/Hypatia workaround
  - Mini-virtual visits
  - More measurements
  - TRIUMF is back!
- **Cosmic Ray studies**
- **Data Activities**
- **Workshops for teachers**
- **Outreach**





## Cosmic developments

- Cosmic Watch
  - Reliability of pairing for 2-fold
  - Test case(s) with QuarkNet centers
  - Learning more through partnership with Accel Kitchen, Japan
- International Muon Week
  - Solar eclipse
- Continuing improvements to Cosmic Ray e-Lab





# Cosmic developments



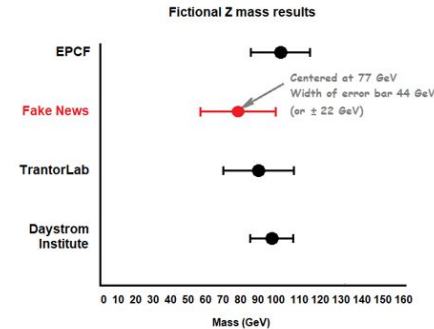
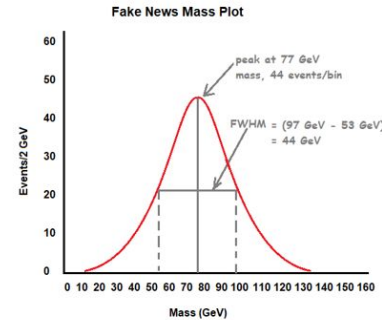
- New
  - Child of W2D2: [Angles and Dimuons](#)
  - Applying the Cosmic e-Lab: [How Speedy are these Muons?](#)

- In progress

- Plotting Consensus
- Heisenberg's Laser

- Why?

- Uncover contemporary physics
- Introduce basic physics
- *Data Activities drive workshop content*





# Working with Teachers

- Camps - teachers meet staff
  - Fellows Camp - strengthen content specialization
  - Lead Teachers Camp - strengthen QuarkNet centers
  - Data Camp - learn particle physics “The QuarkNet Way”
  - Coding Camps 1 and 2 - code for the classroom
- Workshops - staff meet teachers at centers
  - 2023: Coding Workshops and New Questions in Particle Physics
  - 2023-4: Belle II Data
  - 2024: Relativity and Quantum Physics
  - *Workshops drive Data Activities*



## Going beyond

- U.S.
  - Needs Assessment Workshops (new)
  - Reach out to New Mexico, Los Angeles
  - Ongoing engagement in Puerto Rico, Hawaii
- Africa and beyond
  - African School of Fundamental Physics and Applications, e.g. South Africa 2022, Morocco 2024
  - African Conference of Fundamental and Applied Physics, e.g. South Africa 2023





# Going beyond (w/teachers)







## Going beyond (w/partners)

