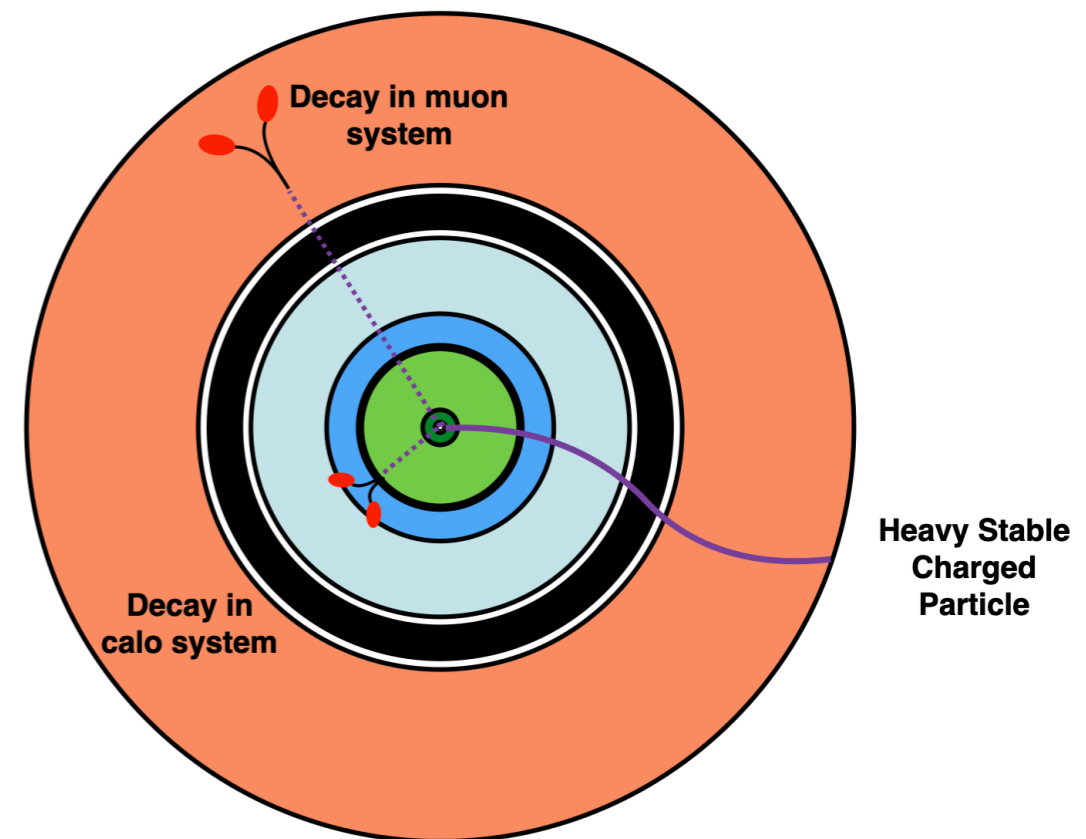


# LHC job matching

Matthew Citron

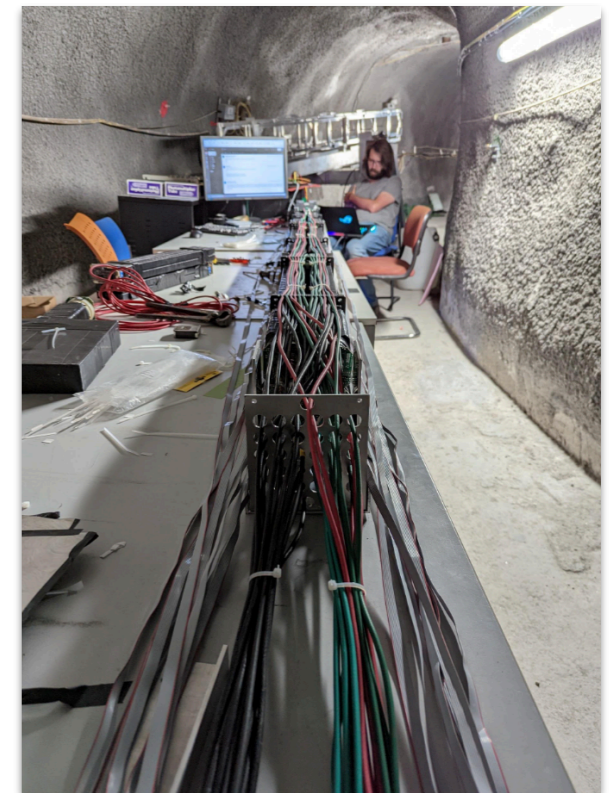
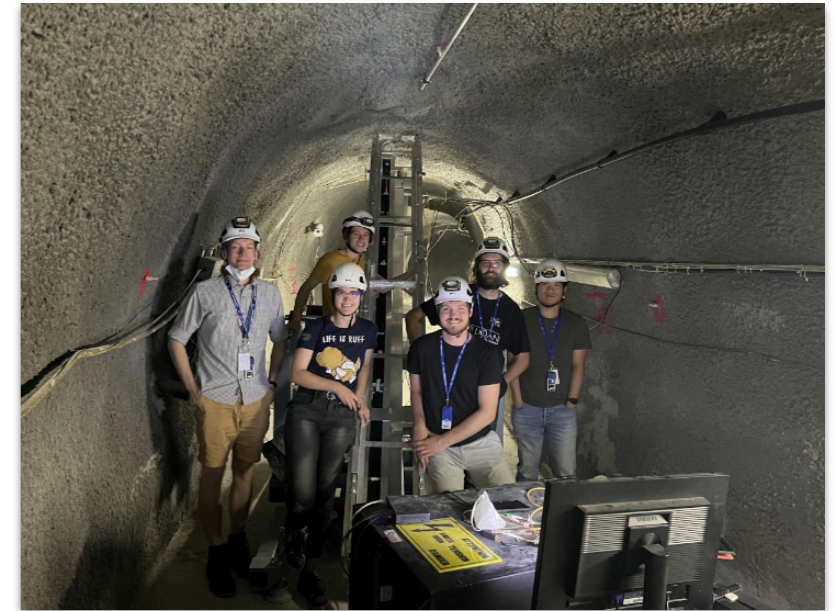
# Research topics: CMS

- Searches for long-lived particles decaying through-out the CMS detector
  - ML techniques
  - Non-standard reconstruction
  - Dedicated triggers (Run 3)
  - Studies of performance at HL-LHC
- Developing L1 trigger algorithms for future CMS data taking



# Research topics: dedicated detectors

- Commissioning and analysis of data from milliQan scintillator-based detector for millicharged particles
- Design and construction of a demonstrator for future forward version of the detector (to be installed late 2023/early 2024)
- Involvement in the Forward Physics Facility that will be a dedicated facility for BSM and SM forward physics (including millicharged particles)



# Members of the research group

- UC Davis CMS has four additional faculty: M. Chertok, M. Mulhearn, R. Erbacher, J. Conway (plus another four in HEP)
  - Weekly full UC Davis CMS meetings
- Many postdocs and grad students at CERN and UC Davis
- I have a 2nd year grad student and will have a 1st year starting in the fall

# Contract conditions

- Position can be based at CERN or UC Davis
- UC postdocs are 2 year initial appointment and then can be renewed for up to 5 years total
- Great benefits and competitive pay (I was a UC postdoc)!
- Full details here: <https://uaw5810.org/postdoc-contract/>

# Collaboration

- For my CMS LL search efforts I work closely with researchers at UCSB and Imperial College London
- The milliQan collaboration comprises ~ 20 people across ~ 10 institutes and I work closely with many of them
- Building forward millicharged detector collaboration now!



# Full job ad

The experimental high energy physics group at the University of California, Davis invites applications for a postdoctoral research position in experimental particle physics on the CMS experiment and the dedicated milliQan detector for millicharged particles at CERN. The CMS group at UC Davis comprises five faculty (Professors Chertok, Citron, Conway, Erbacher, Mulhearn), one senior researcher, and a number of postdoctoral researchers and graduate students. Professor Citron also works on the milliQan detector.

The successful candidate will work under the supervision of Prof. Citron and is expected to play a leading role in searches for BSM long-lived particle (LLP) signatures as well as the HL-LHC Level 1 trigger upgrade at CMS. Prof. Citron's LLP search efforts make use of both non-standard reconstruction as well as the application of sophisticated machine learning techniques. In addition, there will be opportunities to contribute to searches for millicharged particles with milliQan and be involved in the design and construction of proposed future dedicated detectors, such as those at the proposed Forward Physics Facility at the LHC.

A Ph.D. in experimental high energy physics at the time of appointment is required. There is flexibility for the position to be based at UC Davis or at CERN. The appointment is initially for two years and renewable annually, subject to mutual satisfaction.

The position is open immediately and will remain open until filled. Interested candidates can apply by sending a cover letter, curriculum vitae, and statement of research interests and experience, all in PDF format, and arrange to have at least three letters of reference sent to the Department of Physics & Astronomy CMS Group at [postdoc-lhc-2023@ucdavis.edu](mailto:postdoc-lhc-2023@ucdavis.edu).

All inquiries should be directed to [postdoc-lhc-2023@ucdavis.edu](mailto:postdoc-lhc-2023@ucdavis.edu)

INPSIRE link: <https://inspirehep.net/jobs/2635431>

Apply here: <https://recruit.ucdavis.edu/JPF05543>