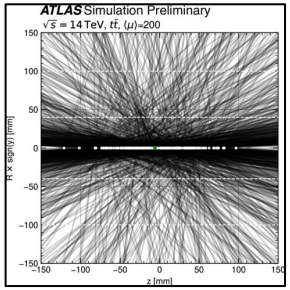
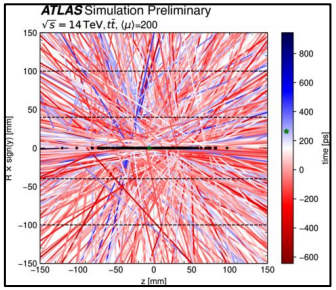
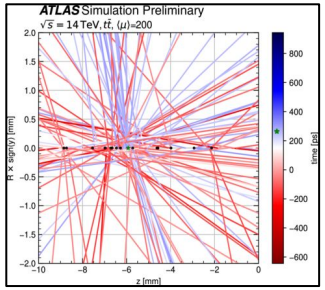
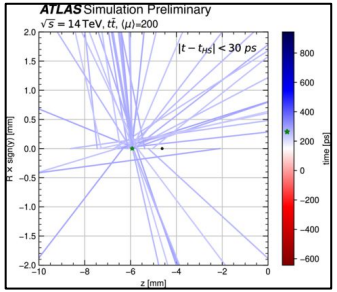








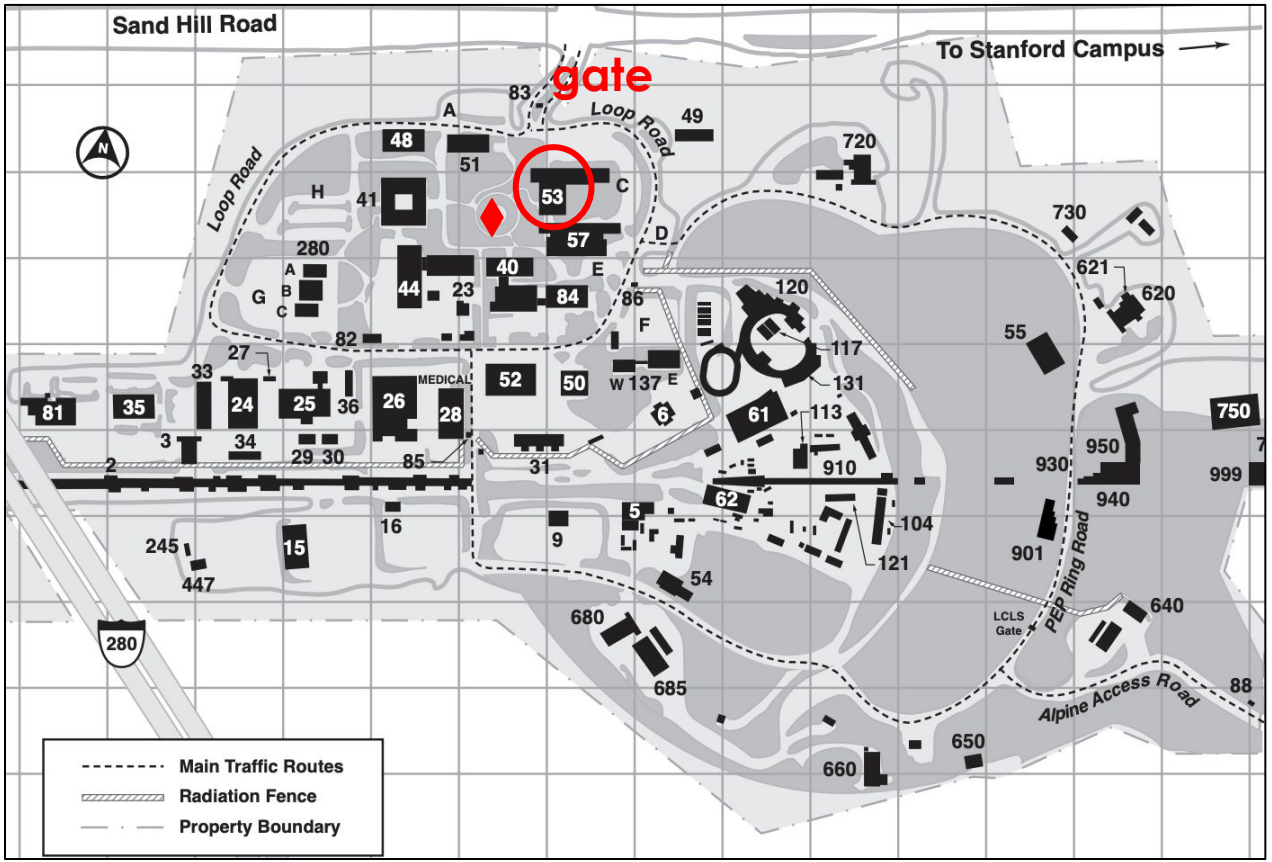
4D Tracking Workshop Introduction

Sander Breur, Maurice Garcia-Sciveres, Carl Haber, Timon Heim, Christopher Kenney, Bojan Markovic, Simone Pagan Griso, Julie Segal, **Ariel Schwartzman**

BERKELEY LAB
Lawrence Berkeley National Laboratory

SLAC NATIONAL ACCELERATOR LABORATORY

Welcome to SLAC – Logistics



Safety:

In case of Earthquake, Remain in building: Duck, cover, and hold position

When shaking stops: Evacuate building via a safe route to the **assembly area (♦)**

Do not leave until you are accounted for, and have been instructed to leave.

Welcome to SLAC – Logistics

- **Lunch** at SLAC cafeteria, just across our meeting room
- **Coffee** breaks in our meeting room
- **WiFi**:
  - eduroam or SLAC-VISITOR networks
  - https://confluence.slac.stanford.edu/display/NetMan/Eduroam+service+at+SLAC
  - https://it.slac.stanford.edu/support/KB0010023
- **Zoom** information posted in indico agenda
  - passcode sent by email to all registered participants

Workshop Charge (1/3)

What are the best technologies for developing a 4D tracker over the next 10 years, and how can we effectively integrate them?

While this question cannot be definitively answered today, it is clear that significant generic R&D is required. This R&D should progress from proof-of-principle demonstrations of individual components to the development of a 4D tracking system demonstrator—something capable of performing 4D tracking in a test beam environment

Workshop Charge (2/3)

The goal of this workshop is to formulate concrete proposals for a U.S. program that enables steady progress towards such a demonstrator.

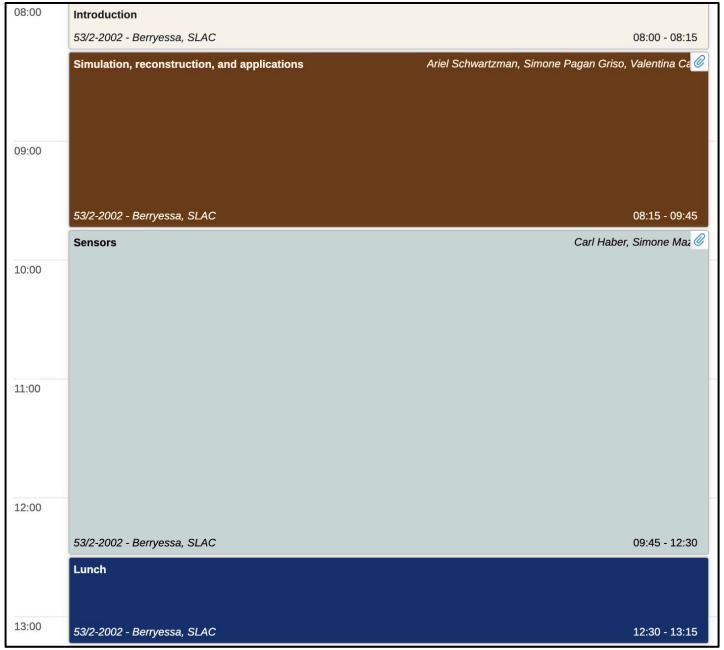
A key initial step will be **defining the necessary requirements and specifications**. This doesn't mean that individual technologies (such as sensors) need to be selected and fixed at this stage. However, a hybrid approach could be outlined, where different sensors can be integrated with a common readout chip, allowing flexibility as the technologies evolve.

Workshop Charge (3/3)

As future applications like HL-LHC Phase 3, MUC, FCC-ee/ILC, and FCC-hh continue to take shape, we aim to identify specific challenges these applications will demand.

By focusing on challenges that are achievable with current technology, we can explore options that will guide the development of future detector systems before moving into application-specific R&D.

The workshop will conclude with a short report summarizing the key findings and recommendations related to these charge questions.



Workshop organized around 4 sessions with specific questions to be addressed

Please contribute to the google docs!

Collaboration discussion at the end, to be followed up with a zoom meeting prior to written report