



University of Houston: SVT Contributions and Interests

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(for the UH group)

Overview of the group and infrastructure

- Our University of Houston (UH) experimental nuclear physics group consists of
 - 4 PIs: Rene Bellwied, Wenqing Fan, Barak Schmookler, and Anthony Timmins
 - 11 Graduate Students: Five actively contribute to EIC efforts
 - 2 incoming postdocs: Shyam Kumar & a second postdoc will join the group soon
- At the university, we have available lab space which can be used for SVT benchtop tests. Undergraduates will be available to help with this work.

Ongoing SVT contributions

- The UH group has been an official member of the SVT effort since last year.
- We are currently involved in three SVT-related efforts:
 1. Tracking simulations: We are actively involved in the SVT simulation and track reconstruction efforts. Schmookler is the co-convenor of the ePIC Tracking WG. Our incoming postdocs will contribute to the development of the ePIC tracking and vertexing software and simulation validation. The group has expertise in track and vertex reconstruction and an understanding of the details of the ePIC and Acts software packages.
 2. Physics simulations to demonstrate the necessity and sufficiency of the current SVT layout. The group has expertise in connecting Inclusive, Jet and HF, and Exclusive observables to detector performance. Fan and Schmookler were involved in the EIC Yellow Report and ATHENA efforts on these topics.
 3. SVT sensor testing at LBL: We have one graduate student – Justin Chan – who is currently stationed at LBL. Justin is contributing to the ongoing benchtop and 88” cyclotron beam tests of the ER2 sensors. This follows up on the work Fan and Schmookler did with the DPTS and MOSS sensors while postdocs stationed at LBL.

Planned SVT contributions and new ideas

- Simulation efforts: Our group will continue to take a leading role in the ePIC tracking efforts through the CD2. We will also expand our efforts to connect physics simulation results to detector requirements.
- Hardware efforts: We are very interested in conducting bench tests locally at UH. We would be able to involve several students and postdocs in this effort. However, we need some guidance on what tests are most relevant, what equipment we would need to purchase, and how to obtain the sensors and/or ASICs for testing.
- Impact of synchrotron radiation (SR) damage: The inner SVT layers will be exposed to a large flux of SR photons. As was discussed in several ePIC meetings, it may be useful to plan dedicated beam-test campaigns to study the impact of large amounts of SR on the SVT sensors. This would require careful planning and feasibility studies, and our group is interested in taking a leading role in this effort.