

EOI of Duke University to contribute to the EIC PID

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1 The name of the contact person for this submission:

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2 The institutions collectively involved in this submission of interest:

This EoI is submitted by Duke University and in close collaboration with and endorsed by INFN. The INFN's intended effort is documented in a separate EoI as it covers a far broader scope.

3 The items of interest for potential equipment cooperation:

Duke University is mainly interested in contributing to the dual RICH (dRICH) R&D and design including simulations, construction and commissioning for a general purpose EIC detector. It is envisioned to closely collaborate with the INFN institutions for an integrated effort.

4 The level of potential contributions are for each item of interest:

The Duke University groups of Profs. Gao and Vossen (in the following called "we") currently foresee an initial contribution commensurate with our group sizes of about 1-2 FTE of postdocs and students. In coordination with INFN, this contribution will initially be focused on simulation studies to support R&D and design. As the project progresses and resources are freed up from other completed projects, we plan to increase our commitment and plan to contribute to design, installation and commissioning significantly. We can draw on our expertise leading and contributing to various detector projects at JLab, BNL and KEK. In particular Cherenkov based detectors for the SoLID and CLAS12 experiments. At Duke we have access to the Physics Department's technical support and laboratory space, and can also benefit from the technical resources at the Triangle Universities Nuclear Laboratory (TUNL), located on the Campus of Duke University next to the physics department building.

5 Assumptions made as coming from the EIC Project or the labs for your items of interest:

We refer to the INFN EoI on this point. While the Duke groups make no assumption at this point about support from the EIC project, the intended personnel contributions aforementioned are based on the assumption that our DOE base grants will support such efforts. However, we assume that the overall project will rely on the host laboratory's (BNL) infrastructure.

6 The labor contribution for the EIC experimental equipment activities:

We estimate that the collaborative effort of Duke University to cooperate on the EIC Project in the R&D and design phase is to include (at an annual basis) 0.2 full-time equivalent FTEs of a professor, 0.15 FTE of a research scientist, 0.85 FTE of a postdoctoral researcher, and 1.0 FTEs of Ph.D. students. During the construction and commissioning phase this effort is anticipated to increase based on project needs and include technical support as well. These personnel efforts are based on the assumption that such efforts will be supported by the DOE base grants. We anticipate this contribution to be for the duration of the EIC project.

7 Indicate if there are timing constraints to your submission:

no timing constraints

8 Indicate any other information you feel will be helpful: