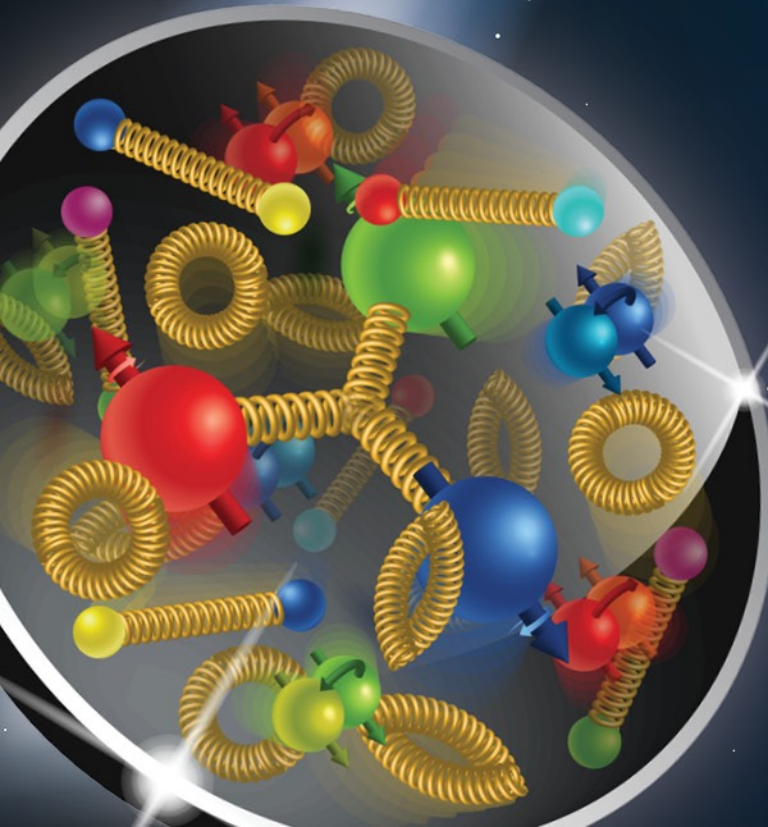


JLab Contributions to EIC Silicon Tracking



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Electron-Ion Collider

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Jefferson Lab



U.S. DEPARTMENT OF
ENERGY

Office of
Science

Current Work

- Proceeding on a reference detector based on known working designs, i.e. ITS-2 style staves/modules
 - Currently working on providing better numbers to system engineer on services
 - This is okay in that it will be an over-estimate of actual detector requirements
 - ITS-3 style will have less cooling, services
 - Not taking into account activities to reduce services (e.g. serial power)
 - Easier to remove services than to add them
 - Barrel further along than disk

Upcoming Work

- Have Mechanical Designers available to help with integration of individual detectors into the full detector
 - This is “on project” EIC work, so is easier to move people around
 - For R&D work there will be groups/scientist/etc. that can help but requires more planning
- Other manpower will be available (i.e. Engineers) for smaller/shorter tasks

EICSC WPs

- Early WPs will be difficult to contribute to due to lack of NDA/PDK
 - Probably no time to get them
 - However, can contribute to testing if needed
 - Probe station for wafer/chip level tests?
 - Beam Tests using JLab's polarized electron beam?
- Later WPs can get integrated into upcoming work that is needed somewhat independent of the actual technology
 - WP4 – Interconnects, testing full scale prototypes
 - WP5 – Cooling, services, external interfaces

Summary

- We're here to help move designs along
 - The EIC personnel can't really work on a specific detector or collaboration, however there are JLab staff who can/are
- Need input from external groups to expedite
 - Barrel and disk
 - This will help us better request/allocate resources
- We plan to work on tasks required for integration for a (or any) Si tracking detector
 - Development of cooling
 - Development of services, routing, machine/detector interface
 - Development of slow controls and interlocks
 - Development of installation and maintenance tools