First ECFA WORKSHOP.

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ARC - a novel RICH detector for a future e+e- collider

Thursday 6 October 2022 16:00 (18 minutes)

Particle identification is a highly desirable attribute of an experiment at a future e+e- collider. For example, high luminosity operation at the Z pole will provide opportunities for precise flavour-physics measurements, for which hadron identification is mandatory. The ability to tag the quark flavour of jets, for instance from Higgs decays, will also be greatly enhanced by high quality hadron identification. The Aerogel RICH Cellular (ARC) detector is a novel RICH system consisting of a dual aerogel-gas radiator system that would provide hadron identification over the required momentum range. Crucially, the ARC is a compact and low-mass detector that can be conveniently integrated into the layout of many of the experiment designs that are being considered for FCC-ee and the ILC. The current status of the ARC design will be presented, and its expected physics performance will be discussed.

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