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Optical Ring Resonators for HEP and Cosmology Applications

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Optical ring resonators have been used in telecommunications and other fields, but so far not in HEP. Used as wavelength notch filters, they could have a major impact in reducing infrared sky background for future cosmology surveys. Ring resonators also are a potential low mass, low power, fast, and compact technology for readout of pixel tracking detectors and/or implementing pattern triggering. We describe a current R&D effort in fabrication and testing prototype optical ring resonators for multiple HEP applications.

Primary author: KUHLMANN, Stephen (Argonne National Laboratory)

Presenter: KUHLMANN, Stephen (Argonne National Laboratory)

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