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Operation of an Energy Recovery Linac with an Internal Target

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Operation of an Energy Recovery Linac with an Internal Target
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Because an Energy Recovery Linac (ERL) decelerates and dumps the beam on each pass, beam degradation in the interaction region orders of magnitude larger than in a storage ring are tolerable in such a device, and some new types of Nuclear Physics experiments can be carried out. In 2016 an experiment was installed to test out this idea (the DarkLight experiment). The ERL used had previously been used for FEL applications where high peak current and a large growth in energy spread was present. For the internal target the machine setup required very small energy spread, and a large transverse emittance growth in the target. Additionally, the addition of a strong solenoid in the transport complicated the details of energy recovery. This presentation will describe how these new machine physics challenges were addressed.
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Attendance

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Scheduling Constraints

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