

## The DarkMESA Experiment

*Tuesday, 17 October 2023 12:10 (20 minutes)*

The dark matter (DM) abundance in the universe is well described by thermal relics on a sub-GeV mass scale. Various models predict a rich phenomenology of portals for the coupling to SM particles.

The DarkMESA beam dump experiment will search for light DM particles behind the P2 experiment at the future MESA electron accelerator. An unprecedented amount of electrons-on-target will favor the radiative production of dark photons, which are expected to decay predominantly into DM pairs if kinematically possible. DarkMESA will provide a scalable and sophisticated concept to detect these DM particles.

This talk will report on the current state of development, future plans, and the estimated exclusion limits.

### Parallel Session

Future Facilities and Directions

**Primary author:** BIROTH, Maik

**Presenter:** BIROTH, Maik

**Session Classification:** Facilities