



Contribution ID: 12

Type: **not specified**

## Gegenschein signal from an inhomogeneous axion dark matter distribution

*Sunday 3 April 2022 11:00 (20 minutes)*

A flux of photons (from e.g. supernova remnants) with a frequency equivalent to one-half of the axion mass, can induce the decay of nonrelativistic axion dark matter into two photons. Half of the photons produced in the decays generate a potentially detectable ‘gegenschein’ radio signal traveling in the opposite direction. We take into account that, in addition to a smooth halo distribution, a fraction of the axionic dark matter might be in the form of compact objects known as axion stars. We discuss how, as a result, the gegenschein signal might be enhanced.

**Authors:** OKAWA, Takuya; FERRER, Francesc (Washington University in St Louis); DEV, Bhupal (Washington University in St. Louis)

**Presenter:** OKAWA, Takuya

**Session Classification:** Session 6