

Hunting for new, weakly coupled particles from eV to MeV

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Fixed target experiments are a particularly useful tool in the search of very weakly coupled particles in the MeV-GeV range, which are of interest, e.g. as potential Dark Matter mediators. The NA62 experiment at the CERN SPS is currently taking data to measure the rare decay $K \rightarrow \pi \nu \bar{\nu}$. Owing to the high beam-energy and a hermetic detector coverage, NA62 also has the opportunity to directly search for a plethora of long-lived beyond-the Standard Model particles, such as Axion-like Particles and Dark Photons. If, on the contrary, these particles are very light, they are a good Dark Matter candidate and various direct detection options exist.

This will be exemplified with the FUNK experiment at Karlsruhe.