



Contribution ID: 4

Type: **not specified**

## **Migdal Effect in Dark Matter Direct Detection Experiments and Its Applications**

*Monday, 3 June 2019 13:30 (45 minutes)*

The elastic scattering of an atomic nucleus plays a central role in dark matter direct detection experiments. In those experiments, it is usually assumed that the atomic electrons around the nucleus of the target material immediately follow the motion of the recoil nucleus. In reality, however, it takes some time for the electrons to catch up, which results in ionization and excitation of the atoms. Those processes are called the Migdal effects. In this talk, I explain how to treat the Migdal effects in the dark matter direct detection experiments. I also explain that the Migdal effects can enhance the detectability of rather light dark matter in the GeV mass range. We also discuss a good candidates of the dark matter models with a mass in the GeV range.

**Presenter:** MASAHIRO IBE

**Session Classification:** JHW