

## 0.1-100eV/q イオンエネルギー・質量分析器の開発

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## Development of 0.1-100eV/q ion energy mass spectrometer

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Time-of-flight (TOF) velocity measurement is widely used for mass analysis on particle measurements in space. TOF method uses an ultra-thin carbon foil. When incident particles pass through the foil, secondary electrons are emitted, which can be used as a timing signal. During the particle passage through the foil, angular straggling, energy loss, and change of charge state occur. These effects make mass resolution worse. In order to reduce the foil effects, LEF (linear electric field) technique can be used, but it costs mass and power.

We are developing another TOF method. Instead of the ultra-thin foil, we apply potential sweep on TOF part in a low energy (0.1-100eV/q) ion instrument. Because of no foil, we can avoid the foil effects such as angular straggling and energy loss, which would be useful for heavier particles.