

## Development of a Radio Frequency Dipole Mass Filter for the Francium Permanent Electric Dipole Moment Search

In order to improve the measurement accuracy of the permanent electric dipole moment of francium (Fr), a radio frequency dipole mass filter (RFDMF) was developed to improve the purity of Fr ion beam. RFDMF has the unique feature of enabling mass separation in the very short beam transport system of only a few tens of centimeters. The experiment to evaluate its performance with Fr ion beam showed that the Fr ion beam purity was increased by a factor of 2.9.

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