

Measurement of the hyperfine splitting energy of the ground-state muonic hydrogen

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A new measurement is planned to precisely determine the muonic proton hyperfine splitting energy with laser spectroscopy by using the intense pulsed muon beam at RIKEN-RAL or J-PARC. A tunable intense mid infra-red laser will be used to cause the hyperfine transition. With circularly polarized laser at the resonant energy, we expect to create observable muon spin polarization in the spin-triplet state. The precise energy value will give in turn the proton Zemach radius.

WG3: Accelerator Physics (Yes/No)

No

WG2: Neutrino Scattering Physics (Yes/No)

No

WG4: Muon Physics (Yes/No)

Yes

WG1: Neutrino Oscillation Physics (Yes/No)

No

Type of presentation

Oral presentation

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