

Second Circular

Dear colleagues,

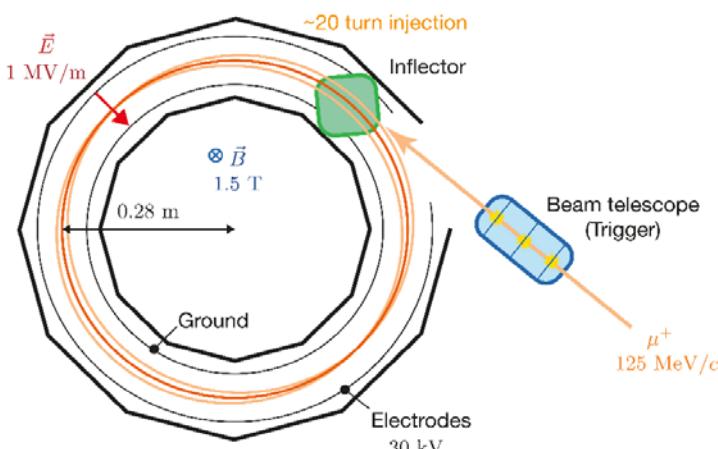
it is our pleasure to announce that the registration for the workshop on the muon EDM:

Kick-off workshop for the search of a muon EDM using the frozen spin technique at PSI.

to be held at the Paul Scherrer Institute, Switzerland, on 17.-19.02.2020 is open.

The aim of the workshop is to bring together scientists strongly motivated to participate in a search for a muon electric dipole moment (EDM) using the frozen spin technique at PSI. Assuming CPT invariance, electric dipole moments violate the combined symmetry of charge and parity (CP) and are thus of particular interest as probes for CP violation beyond the standard model. Presuming lepton flavor universality (LFU) the stringent limit on the electron EDM ($d_e < 1.1E-29 \text{ ecm}$) [1], measured using molecules, translates by mass scaling also to $d_m < 2.2E-27 \text{ ecm}$, a value about 8 orders of magnitude smaller than the current direct upper limit of $d_m < 1.8E-19 \text{ ecm}$ [2]. However, theories that abandon LFU [3] and references therein generally predict much larger values and are of increasing interest in the light of recent deviations from the SM in B-factories measurement of semileptonic meson decays and the muon g-2 discrepancy.

Employing the frozen spin technique [4] in a dedicated compact storage ring [5] at PSI would allow an improvement of the current direct limit by 3 orders of magnitude.



Topics of the workshop are:

- beam properties and beam injection into a compact storage ring
- electric and magnetic field properties and generation
- storage ring and kicker magnet
- simulations and finite element calculations (electric field / magnetic field)
- muon trigger and positron tracking
- data acquisition and fast electronics

Contact: philipp.schmidt-wellenburg@psi.ch

1. ACME collaboration, Nature 562(2018)355
2. Bennett et al, PRD80(2009)052008
3. e.g. Crivellin et al., PRD98(2018)113002
4. Farley et al., PRL93(2004)052001
5. Adelmann et al., JPG37(2010)085001



The workshop will be organized as a topical seminar with break-out sessions addressing the different challenges of a compact muon storage ring employing the frozen spin technique to search for an electric dipole moment of the muon. In addition to invited contributions (30'), we very much appreciate shorter contributions by all participants. We plan for ample discussion time in each session.

The break-out sessions will be organized in parallel and will each work on one particular aspect of the experiment. The results of these breakout sessions will then be presented and discussed in a common session. Each group working on a particular topic shall provide a write-up, which then will be used as input for a letter-of-interest to the physics advisory committee at PSI. More information on <https://indico.psi.ch/event/8339/>.

Organizational committee:

Anita Van Loon (Workshop secretary)

Mikio Sakurai

Philipp Schmidt-Wellenburg

with advise and support from:

Andreas Adelmann, PSI, Switzerland

Malte Backhaus, ETH Zürich, Switzerland

Andreas Crivellin, University Zürich, Switzerland

Kim-Siang Khaw, Tsung-Dao Lee Institute

and Shanghai Jiao Tong University, China

Klaus Kirch, PSI & ETH Zürich, Switzerland

Andreas Knecht, PSI, Switzerland

Angela Papa, University of Pisa and INFN, Italy

Registration:

Registration on <https://indico.psi.ch/event/8339/>.

Registration fee: CHF 125

Registration fee includes coffee breaks and workshop dinner.

Payment by bank transfer

Be aware that all bank charges must be covered by the sender. Indicate on bank transfer the following information (mandatory): - reason of payment: "Kick-off workshop Muon EDM" - full name of participant(s) for whom payment is to be made - name of organisation/affiliation

Bank:

Swiss Post - Postfinance, Nordring 8, 3030 Bern, Switzerland

Bank code number: 9000

SWIFT code: POFICHBEXXX

IBAN: **CH02 0900 0000 3000 3478 7**

Account holder's name:

Paul Scherrer Institut, 5232 Villigen PSI, Switzerland

Payment by Credit card

Please do the payment by using the e-payment in Indico. The following credit cards will be accepted: Visa, Mastercard, American Express, JBC, Diners Club International.



Accommodation:

Participants can find easily accommodated in the lively town of Baden, between Zurich and PSI, or in the [PSI guesthouse](#).

Baden ([Info on Baden](#)) is situated approx. 10 km from the Paul Scherrer Institute and has several restaurant and bars located in its historic center. ([see on map](#))

Public transport is available (check at [www.sbb.ch](#))

- by train from Baden to Siggenthal-Station (5 min) and then direct bus to PSI (~10min)
- by train from Baden to Brugg (5min) and then direct bus to PSI (~15min)

In the following Hotels we have blocked rooms for the workshop until 17.01.2020:

- [Hotel Linde **** \(link\)](#) (CHF 115,- per night excl. tourist tax)
- [Trafohotel Baden ***](#) (CHF 150,- per night excl. tourist tax)

Please give the password "MuonEDM" when booking the rooms.

Contact: philipp.schmidt-wellenburg@psi.ch