EUROPEAN WORKSHOP ON ACCELERATOR ALIGNMENT ANNOUNCEMENT

The third European Workshop on Accelerator Alignment will take place at the ESRF from June 3 to 6, 2025, following successful workshops in June 2023 and April 2024 at the ESRF and CERN. The workshop aims to promote information exchange and build a strong European community focused on Accelerator, Detector, and Beamline Alignment. Key topics will include instruments, measurement techniques, uncertainty analysis, the Engineering to Alignment (E2A) workflow, software, artificial intelligence, machine learning, and workforce-related challenges.

SCHEDULE:

Tuesday 03 June

Cheese & Wine icebreaker 17.30 to 19.30 - ESRF Central Building Ground Floor

Wednesday 04 June

Welcome coffee 8.00 to 8.30

Welcome from ESRF management 8.30 to 9.00

Introduction 9:00 to 9:45

- Organization & outcome of the first two workshops
- Objectives for this workshop
- Round table

Coffee break

Session 1: Software & Databases 10.15 to 11.45
Chairs: Juergen Gutekunst, Guillaume Kautzmann

- LGC open source: progress achieved and next steps (CERN, ESRF, Soleil, etc.)
    - o Status report and feedback from ESRF and others
- Spatial Analyser: proposal for licenses
- Discussion on software development and database development:
    - o Overview of coordinate database @ DESY
- How do you document, report and store the calculations and results of your measurements?
    - o ESS automatic tagging of report
- Smoothing protocols: which software do you use for that purpose, if any? Which algorithms?
    - o Overview of CERN protocol
- Re-Measuring and adjusting only a part of an existing networks - how do you fit the re-measured part to the old parts of the network?

Lunch ESRF Cafeteria

Session 2: Engineering to Alignment (E2A) workflow 13.30 to 15.00
Chairs: Bertrand Nicquevert, Tomasz Zawierucha

- Examples of E2A workflow in labs
- How to be efficient?

Coffee break

Session 3: Instruments & methods 15.30 to 17.00
Chairs: Solomon Kamugasa, Gilles Gatta

- Use of 3D drone data, inclinometers in labs? Any recommendations, examples?
- Use of Laser trackers in terms of quality control, maintenance, periodic checks
- How to identify systematic errors to help for more sophisticated calibrations?
- Verification, calibration and history records for equipment and accessories: what is the best practice around the labs? This is in terms of frequency, procedures, engagement with OEM and document? Any application where all is recorded centrally in a user-friendly format?

Brainstorming:
Chairs: Cristina Gonzalez Torres, Marta Llonch Burgos

- How to attract young people to our field? How to share resources? How to share good profiles? How to train the newcomers?
- What is the future of this seminar? How should the seminar evolve?

Dinner: L'*Epicurien* Restaurant 1 Pl. aux Herbes, 38000 Grenoble at 19:30

Thursday 05 June

Session 4: Uncertainty in measurement 8:30 to 10:00
Chairs: Sébastien Ducourtieux, David Martin

- Development of a common expression of uncertainty in measurement in accelerator alignment
- Interlaboratory comparison

Coffee break

Session 5: Discussion with industrial partners 10:30 to 12:30
Chairs: Markus Schlösser, Jean-Frédéric Fuchs

Lunch ESRF Cafeteria

Session 6: Towards the future 14:00 to 15:30
Chairs: Hélène Mainaud Durand, Dirk Mergelkuhl

- Requirements/desires for new instruments and software
- How to use AI & what can be solved by AI in the next 5 years
- Use of AI for the treatment of 3D scan data
- Precise identification and quantification of the elements to be re-aligned

Summary and Close 15:30 to 16:00
Chairs: Hélène Mainaud Durand, David Martin