



Contribution ID: 61

Type: Oral presentation (by invitation only)

## Coordinate reference and networks

*Wednesday 1 June 2022 16:54 (18 minutes)*

The presentation will discuss the reasons why coordinate reference systems (CRSs) are needed for building and operating FCC. It will briefly summarize CERN's coordinate reference systems' diversity and historical heritage as well as the characteristics of the optimal coordinate reference system for the FCC. Additionally, key aspects for the implementation of the reference systems through geodetic networks over the LHC and FCC areas will be presented. These networks consist of sufficiently stable, materialized points with precisely determined coordinates that are accessible for a wide range of user needs, such as civil engineering and tunneling works, monitoring deformations, installation of machines, and others. The presented work is based on a collaboration and on exchange between experienced geodesists from CERN, academia, French and Swiss national geodetic institutions, and the industry. It thus combines the user needs with established best practices from different countries, and a projection of expected technological advances until the potential start of the FCC construction.

**Primary author:** VARGA, Matej

**Presenter:** VARGA, Matej

**Session Classification:** Technical Infrastructures

**Track Classification:** Technical Infrastructures