12th MT ARD ST3 Meeting 2024 in Darmstadt 3 to 5 July



Contribution ID: 35

Type: not specified

Cut-edge RF Oscillators for Accelerator Facilities, Future Perspectives

Friday 5 July 2024 08:50 (20 minutes)

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Today's high-precision accelerators with arrival time stabilities in the sub-fs range require a very low-noise and long-term stable source as the main oscillator. Due to the different locking bandwidths of the various subsystems, sources with low phase noise down to below -175dBc/Hz are required for arrival times below 1fs. In order to connect laser systems and optical low-latency links without time jitter loss, additional low 1/f noise edges, typically from high frequency (RF) sources, are required. In this presentation, state-of-the art RF oscillators will be presented, current challenges and an outlook of the next generation of RF sources for arrival times in the 100as range will be given.

Summary

Presenter: LUDWIG, Frank (MSK (Strahlkontrollen))

Session Classification: Session 3: Controls/Seeding/DAQ