

LLRF Topical Workshop - Timing, Synchronization, Measurements and Calibration



Contribution ID: 77

Type: Oral

Basics of RF Reference Signal Generation and Synchronization Systems

Wednesday, 30 October 2024 17:00 (45 minutes)

This contribution, planned as a sort of short summary/tutorial, will cover the basics of RF synchronization, starting with theoretical definitions and an attempt to put together and organize concepts and names frequently confused by various people. Items such as the definition of synchronization systems and their accuracy measures will be discussed, followed by sources of instabilities and methods of achieving required precision. The concept of phase drifts and noise will be introduced, followed by basic phenomena influencing these measures in practical systems. Various methods of signal generation and distribution will be shown, including representative examples of passive and active, as well as RF cable and optical fiber-based systems.

Primary author: CZUBA, Krzysztof (Warsaw University of Technology)

Presenter: CZUBA, Krzysztof (Warsaw University of Technology)

Session Classification: Synchronization

Track Classification: Synchronization