Contribution ID: **120** Type: **Invited Poster**

Impact of Low-Noise Digital Technology on Time Scales

This work discusses how a traditional focus on physical signals in clock composition and time scale generation can limit the potential benefits of digital electronics. The paper presents a digital approach that emphasizes the information carried by sinusoids, rather than the sinusoids themselves, to enable numerical implementation of clock composition functionalities. The work compares an analog approach, involving frequency synthesizers and complex instruments, with a simpler digital approach that uses code to replace most instruments. The work also describes testing of this digital approach at FEMTO-ST and FEMTO-Engineering using state-of-the-art oscillators and facilities.

Authors: CALOSSO, Claudio (Istituto Nazionale di Ricerca Metrologica and Istituto Nazionale di Fisica Nucleare); Prof. RUBIOLA, Enrico (CNRS FEMTO-ST Institute, and INRiM)

Presenter: CALOSSO, Claudio (Istituto Nazionale di Ricerca Metrologica and Istituto Nazionale di Fisica Nucleare)

Track Classification: SI definition, Clocks and Time Scales