



Contribution ID: 6

Type: **not specified**

Theoretical and experimental study of optoelectronic oscillators (OEO) for telecommunications, metrology, and artificial intelligence

Tuesday, 18 November 2025 09:15 (15 minutes)

The optoelectronic oscillators (OEO) consist of closed-loop oscillators characterized by an optical path with local nonlinearity and a linear frequency-filtered electrical path. This paradigmatic system is an ideal benchmark for the investigation of delay-based infinite-dimensional systems, which provide a higher complexity than low-dimensional nonlinear systems. The OEOs find their numerous main technological applications in areas such as ultra-stable microwave generation, optical communications, information processing, artificial intelligence, sensing, random numbers generation, and more, with performances surpassing other systems.

Primary author: TALLA MBÉ, Jimmi (University of Yaoundé 1)

Presenter: TALLA MBÉ, Jimmi (University of Yaoundé 1)

Session Classification: Tuesday Morning I

Track Classification: AfPS