

“Opto-microwave source using a harmonic frequency generator driven by a VCSEL-based ring oscillator”, pp. 248 - 253

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Abstract – This paper presents a new optoelectronic architecture for the generation of microwave and millimeter-wave signals. That hybrid source results from the merging of two optoelectronic techniques, combining their respective advantages: frequency multiplication, that allows to obtain high-frequency signals, mainly limited by the photodetection bandwidth and fiber delay line-based ring oscillation, characterized by low phase noise and narrow linewidth. The operating principles of both techniques are presented and illustrated by some experimental measurements, showing a novel way to generate microwave signals using only optical and optoelectronic devices.