

High bandwidth RF and microwave photonic signal processing using Kerr micro-combs

David Moss¹

¹Affiliation not available

June 7, 2021

Abstract

Integrated Kerr micro-combs, a powerful source of many wavelengths for photonic RF and microwave signal processing, are particularly useful for transversal filter systems. They have many advantages including a compact footprint, high versatility, large numbers of wavelengths, and wide bandwidths. We review recent progress on photonic RF and microwave high bandwidth temporal signal processing based on Kerr micro-combs with spacings from 49-200GHz. We cover integral and fractional Hilbert transforms, differentiators as well as integrators. The potential of optical micro-combs for RF photonic applications in functionality and ability to realize integrated solutions is also discussed.

Hosted file

Adv Physics HAL.pdf available at <https://authorea.com/users/418067/articles/524939-high-bandwidth-rf-and-microwave-photonic-signal-processing-using-kerr-micro-combs>