

Study of the Mach-Zehnder Interferometric Technique for MEMS/NEMS-Based Dielectric Resonator Tuning

Héctor J. De Los Santos, Ph.D.
NanoMEMS Research, LLC
Irvine, CA
Email: hjd@nanomems-research.com

Abstract

Modulation of the properties of metallic microwave-scale Mach-Zehnder interferometers (MZI) coupled to dielectric resonators (DR) may be used to tune the resonance frequency of the latter. In this talk we present results on a theoretical study of the intrinsic tuning properties of an MZI-DR-transmission line system, of the type employed in DR oscillators, in particular, dealing with the tuning range and quality factor. An experimental verification of the concept is included.