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Title

Using dual-mode self-locked semiconductor laser for optical millimeter-wave application

Source

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Abstract

In this study, an optical millimeter-wave (mm-wave) generator is proposed and experimentally demonstrated by using a self-injected Fabry-Perot laser diode (FP-LD), having mode spacing of 1.11 nm, for dual-mode beating in 140 GHz band (terahertz band). The created dual-wavelength also can be also modulated at 1.25, 2.5, and 10 Gb/s with on-off keying (OOK) modulation format by external optical modulator, respectively, in 20 km fiber transmission. Moreover, the dual-mode laser can be selected in difference wave-lengths by tuning the optical filter inside cavity for the future WDM applications. (21 References).