Abstracts

High-frequency and low-jitter optical pulse generation using semiconductor mode-locked lasers

K. Sato, A. Hirano, N. Shimizu and I. Kotaka. "High-frequency and low-jitter optical pulse generation using semiconductor mode-locked lasers." 1999 Transactions on Microwave Theory and Techniques 47.7 (Jul. 1999, Part II [T-MTT] (Special Issue on Microwave and Millimeter-Wave Photonics)): 1251-1256.

This paper describes optical short pulse generation at over 100 GHz using semiconductor mode-locked lasers integrated with electroabsorption modulators. Active mode locking at 102 GHz is performed by a half-frequency modulation technique. The phase noise of a generated pulse train is evaluated by means of an opto-electrical down conversion technique using a unitraveling-carrier photodiode. A low-timing jitter of 0.23 ps is obtained for 102-GHz 2.4-ps pulses.

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