332. Title:Experimental investigation of high-power tunable THz-wave parametric oscillator based upon MgO:LiNbO3 crystal

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Abstract:High-power nanosecond pulsed terahertz (THz)-wave radiation is achieved via a surface-emitted MgO:LiNbO3 terahertz parametric oscillator (TPO). THz-wave radiation from 0.8 THz to 2.8 THz is obtained. The maximum THz-wave output is 173.9 nJ per pulse at 1.73 THz while the pump power density is 197.4 MW/cm2. The corresponding energy conversion efficiency is 2.2×10-6. During the experiments the first-order and the second-order Stokes waves are observed. The frequency shift of the first-order Stokes wave is equivalent to the frequency of generated THz-wave.