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Authors:Zaitsu, Shin-Ichi (1); Imasaka, Totaro (1)
Author affiliation:(1) Graduate School of Engineering, Kyushu University, 744 Motooka, Nishi-ku, Fukuoka, 819-0395, Japan; (2) PRESTO, Japan Science and Technology Agency, 4-1-8 Honcho Kawaguchi, Saitama, 332-0012, Japan; (3) Center for Future Chemistry, Kyushu University, 744 Motooka, Nishi-ku, Fukuoka, 819-0395, Japan
Corresponding author:Zaitsu, S.-I.(s-zaitsu@cstf.kyushu-u.ac.jp)
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Abstract:We demonstrate the generation of continuous-wave (cw) Raman sidebands through phase-matched four-wave mixing (FWM) in molecular hydrogen. The phase-matching conditions of the intracavity FWM driven in our dispersion-compensated high-finesse cavity are satisfied over a 52.8 THz-wide frequency range (763.9-883.6 nm). This leads to the generation of high-order anti-Stokes emission. The cw Raman sidebands have sufficient bandwidth to allow the synthesis of a train of optical pulses with a duration of 13 fs at a repetition rate of 17.6 THz under phase-locked conditions.
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