

Adiabatic Frequency Conversion

Analogy with Bloch's equations - but in space. Efficient/high intensity second harmonic generation. References [1, 2]. (You may have to dig older citations).

Fiber Laser

What changes the group velocity and the mode frequency in mode-locked fiber lasers [3]. (See also [4]).

Gratings in air

Claims to deflect high power 532 nm beams with a pair of mW UV lasers. See zipped file.

Parametric oscillators on a chip

[5, 6, 7]

- [1] J. Moses, H. Suchowski, and F. X. Kärtner. Fully efficient adiabatic frequency conversion of broadband ti:sapphire oscillator pulses. *Opt. Lett.*, 37:1589, 2012.
- [2] H. Suchowski, P. R. Krogen, S.-W. Huang, F. X. Krtner, and J. Moses. Octave-spanning coherent mid-ir generation via adiabatic difference frequency conversion. *Opt. Express*, 21:28892, 2013.
- [3] Hanieh Afkhamiardakani and J.C. Diels. Controlling group and phase velocities in bidirectional mode-locked fiber lasers. *Optics Letters*, 44:2903–2906, 2019.
- [4] N. G. Basov, R. V. Ambartsumyan, V. S. Zuev, P. G. Kryukov, and V. S. Letokhov. Nonlinear amplifications of light pulses. *Soviet Physics JETP*, 23:16–22, 1966.
- [5] Christian Reimer, Michael Kues, Lucia Caspani, Benjamin Wetzel, Piotr Roztock, Matteo Clerici, Yoann Jestin, Marcello Ferrera, Marco Peccianti, Alessia Pasquazi, Brent E. Little, Sai T. Chu, David J. Moss, and Roberto Morandotti. Cross-polarized photon-pair generation and bi-chromatically pumped optical parametric oscillation on a chip. *Nature Communications*, 6(9236):1–7, 2015.
- [6] M. Peccianti, A. Pasquazi, Y. Park, B.E. Little, S.T. Chu, D.J. Moss, and R. Morandotti. Demonstration of a stable ultrafast laser based on a nonlinear microcavity. *Nature Communications*, 3:765, 2012.
- [7] Luis Ledezma, Arkadev Roy, Luis Costa, Ryoto Sekine, Robert Gray, Qiushi Guo, Rajveer Nehra, Ryan M. Briggs, and Alireza Marandi. Octave-spanning tunable parametric oscillation in nanophotonics. *arXiv*, 2203.11482v3, 2022.