AUTOMATIC TUNING OF AN ACULIGHT OPTICAL PARAMETRIC OSCILLATOR

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We have automated the tuning of a continuous wave, singly resonant optical parametric oscillator (Lockheed-Martin Aculight ARGOS 2400-SF-15). This OPO is capable of producing > 1 Watt of continuously tunable idler output between 2.3 and 3.9 μm. We will discuss a simple algorithm and its implementation that synchronizes the tuning of three separate OPO tuning elements, which allows for several hundred wavenumbers of efficient, automatic, continuous tuning. Continuous feedback from a wavemeter (Bristol Instruments 621A) limits the frequency resolution to $\sim$10 MHz.