ULTRA-BROAD BANDWIDTH CAVITY ENHANCED ABSORPTION SPECTROSCOPY

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The multiplex advantage of current cavity enhanced spectrometers is limited by the high reflectivity bandwidth of the mirrors used to construct the high finesse cavity. Previously, we reported the design and construction of a new spectrometer that circumvents this limitation by utilizing Brewster's angle prism retroreflectors. The prisms, combined with a supercontinuum source generated by pumping a highly nonlinear photonic crystal fiber, yields a spectral window ranging from 500 nm to 1750 nm. Recent progress in the instruments development will be discussed, including work on modeling the prism cavity losses and a new high power supercontinuum source based on an amplified mode-locked picosecond laser.