HIGH-RESOLUTION FOURIER-TRANSFORM INTRA-CAVITY LASER ABSORPTION SPECTROSCOPY: APPLICATION TO $^{12}C_2H_2$ NEAR 12300 cm^{-1}

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The capabilities of ICLAS associated with a high resolution Fourier Transform spectrometer (FT-ICLAS) are investigated with a Ti : Sapphire laser. Weak absorption lines of atmospheric water were used to test the accuracy of absolute intensity measurements by FT-ICLAS leading to an excellent agreement (a few %) with the intensity values obtained by conventional FTS. The performances in terms of spectral resolution (0.028 cm^{-1}) and sensitivity ($\alpha_{min} \approx 2 \times 10^{-9}$ cm^{-1}) are illustrated by the spectroscopic study of the overtone spectrum of $^{12}C_2H_2$ between 12250 and 12400 cm^{-1} which allowed for a significant improvement of recent CRDS measurements. Among the three $\Pi - \Sigma$ bands rotationally analyzed, one is newly observed. The absolute intensity values of the bands are given.