

# ARTICULO ACEPTADO

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Paper: High Resolution Spectroscopy of Ammonia in a Hollow-Core Fiber

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Abstracts:

We have demonstrated frequency modulation saturation spectroscopy of the  $\hat{1}\frac{1}{2}1 + \hat{1}\frac{1}{2}3$  band of ammonia in hollow-core photonic bandgap fibers (HC-PBFs). Previously blended lines have been resolved and the

corresponding molecular transitions assigned. Cross-over resonances are observed between transitions that do not share a common level. We have measured the pressure dependence of the line shape and determined the collisional self-broadening coefficients for ammonia. The many absorption

lines of ammonia in the 1.5  $\mu\text{m}$  wavelength region are potential frequency references lines for optical communication as well as candidates for spectroscopic trace gas monitoring.