



Overview of Molecular Line Parameters for the Orbiting Carbon Observatory

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The Orbiting Carbon Observatory, scheduled to launch early in 2009, will make spatially resolved measurements of the column averaged CO_2 dry air mole fraction, X_{CO_2} , with precisions of 1 ppm to distinguish their spatial and temporal gradients of CO_2 . Achieving this goal requires implementation of non-Voigt line shape models, line mixing and improved molecular line parameters for near infrared absorption bands of O_2 (near 760 nm), and CO_2 (near 1600 and 2060 nm). The first interval is dominated by the absorptions of the O_2 A-band while the others contain strong CO_2 features, as well as weak transitions of water and methane. The OCO linelist is composed of results from numerous new laboratory studies undertaken to improve experimental precisions and to characterize line mixing effects. The sources and accuracies of the new linelist for the three OCO channels¹ will be described.

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