

Water Vapour Line Parameters From Microwave To Medium Infrared: A Comprehensive Guide

Water vapor, a crucial component of the Earth's atmosphere, plays a significant role in various atmospheric processes, including weather and climate dynamics, radiative transfer, and cloud formation. Accurately characterizing water vapor's interactions with electromagnetic radiation is essential for remote sensing, spectroscopic diagnostics, and atmospheric modeling. This comprehensive volume, meticulously crafted by leading experts in the field, provides a comprehensive reference on water vapor line parameters, spanning from microwave to medium infrared wavelengths.



Water Vapour Line Parameters from Microwave to Medium Infrared: An Atlas of H₂16O, H₂17O and H₂18O Line Positions and Intensities between 0 and 4350 cm⁻¹ ... Tables of Selected Constraints, 19) by J. -M. Flaud

★★★★☆ 4.3 out of 5

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Screen Reader : Supported

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A Treasure-Trove of Line Parameters

This authoritative volume presents a vast compilation of water vapor line parameters, including line positions, intensities, pressure-induced broadening and shifting coefficients, temperature dependences, and collisional narrowing parameters. These parameters are meticulously organized and presented in a user-friendly format, making them readily accessible for researchers and practitioners in various disciplines.

Empowering Atmospheric Research

Armed with this invaluable resource, atmospheric physicists can confidently model water vapor absorption and emission in the atmosphere, enabling accurate simulations of radiative transfer and the study of water vapor's impact on climate dynamics. Remote sensing experts can leverage the line parameters to develop and refine algorithms for retrieving water vapor profiles from satellite measurements, enhancing the precision of atmospheric characterization.

Advancing Spectroscopic Diagnostics

Spectroscopic diagnosticians will find this volume indispensable for designing and interpreting experiments involving water vapor. The comprehensive line parameters enable precise modeling of water vapor absorption spectra, facilitating accurate measurements of temperature, pressure, and water vapor concentration in various environments, including combustion processes, plasma physics, and astrophysical plasmas.

A Cornerstone for Molecular Spectroscopy

This comprehensive guide serves as a cornerstone for molecular spectroscopy, providing a wealth of information on the spectroscopic properties of water vapor. Researchers in molecular physics and

spectroscopy can utilize the line parameters to study molecular interactions, line shape analysis, and the fundamental properties of water vapor.

A Legacy of Excellence

Building upon the renowned HITRAN and HITEMP databases, this volume represents the latest advancements in water vapor spectroscopy. The authors have meticulously compiled and evaluated the most up-to-date experimental and theoretical data, ensuring the accuracy and reliability of the presented line parameters.

Essential for a Wide Range of Disciplines

This comprehensive reference is indispensable for researchers and practitioners in atmospheric physics, remote sensing, spectroscopic diagnostics, molecular spectroscopy, climate science, environmental monitoring, and astrophysics. Its broad scope and exhaustive coverage of water vapor line parameters make it an essential resource for anyone seeking to understand and quantify water vapor's interactions with electromagnetic radiation.

Free Download your copy today and unlock the secrets of water vapor spectroscopy!

Free Download Now

Water Vapour Line Parameters from Microwave to Medium Infrared: An Atlas of H₂O, H₂¹⁷O and H₂¹⁸O Line Positions and Intensities between 0 and 4350 cm⁻¹ ... Tables of Selected Constraints, 19) by J. -M. Flaud



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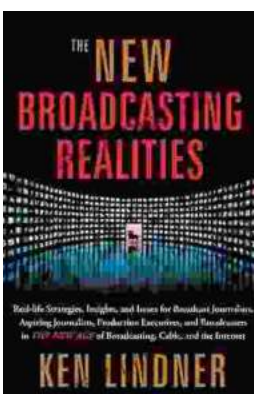
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