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**PRESENT STATUS AND PERSPECTIVES OF LINE-BY-LINE ANALYSES
OF THE PH₃ ABSORPTION SPECTRUM IN THE OCTAD RANGE
BETWEEN 2800 AND 3600 cm⁻¹**

A. V. NIKITIN, Tomsk State University, 36 Lenin Avenue, 634050 Tomsk, Russian Federation and V.E. Zuev Institute of Atmospheric Optics SB RAS, 1, Akademician Zuev square, 634021 Tomsk, Russia; **Y. A. IVANOVA**, Tomsk State University, 36 Lenin Avenue, 634050 Tomsk, Russian Federation; **M. REY, VI.G. TYUTEREV**, Groupe de Spectrométrie Moléculaire et Atmosphérique, UMR CNRS 7331, UFR Sciences BP 1039, 51687 Reims Cedex 2, France; **L.R. BROWN**, Jet Propulsion Laboratory, California Institute of Technology, 4800 Oak Grove Drive, Pasadena, CA 91109, USA

A new study of PH₃ line positions and intensities was performed for the lower portion of the Octad region ¹ between 2800 and 3600 cm⁻¹ using high resolution Fourier transform spectra. Line positions and intensities were retrieved by least square curve-fitting procedures and analyzed using the ab initio based effective Hamiltonian ² and the effective Dipole moment expressed in terms of irreducible tensor operators adapted to spherical top molecules. A new measured line list produced positions and intensities for more 7200 features. Assignments were made for 60 percents of these; 4500 experimental line positions and 1300 selected line intensities were fitted with RMS standard deviations of 0.006 cm⁻¹ and 15 percents, respectively. The sum of calculated intensities between 2700 and 3650 cm⁻¹ is in a good agreement with HITRAN2012³ and is 5-13% lower than sum of calculated intensities from different ab initio dipole moment surfaces ⁴. The integrated intensities of lower polyads was calculated.

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