

THE ELECTRONIC GROUND STATE OF THE NITRATE RADICAL: A DECADE OF CONTROVERSY

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In the ten years since the traditional assignment of its degenerate stretching fundamental became controversial, a great deal of work - both theoretical and experimental - has been done on the NO_3 molecule. A brief review of these developments will be given, and results of very high-level calculations of the dispersed fluorescence and negative ion photoelectron spectra of this molecule will be presented together with the corresponding experimental results. In addition, the question of "what is next to do" on the ground state - from a theoretical point of view - will be addressed. Time permitting, some discussion will also be devoted to the strongly Jahn-Teller active ${}^2E''$ (first excited) electronic state, where the level of understanding and agreement thus far obtained from experiment and theory is still at a rather primitive stage.