MECHANISM OF THE MAGNETIC FIELD QUENCHING OF THE NO B(0-9)-BAND FLUORESCENCE

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We studied the magnetic field effects under the ”direct” rf discharge excitation of the B state levels, and under the direct observation of the LIF signal for the 0-9 transition excitation. It has been found that the emission of the 0-9 transition induced by the rf discharge and by the laser irradiation in the presence of the rf discharges have been quenched by a field with the same profile on the field strength. The observed data can not be explained by the mechanisms discussed in the literature. Therefore, we have proposed two schemes - the 3-resonance levels scheme and two 2-levels one, which can be used for analysis of the magnetic field effects in the NO fluorescence. According to the general statements the two 2-levels system is most real, than the 3-levels one in case of the diatomic molecules. Detailed analysis of these mechanisms shows that the total set of the observed data can be explained by these schemes.