ON THE LOCAL MODE APPROACH IN XY_2 PLANE MOLECULES: ANALYTICAL DESCRIPTION OF EFFECTS IN ENERGIES AND LINE/BAND STRENGTHS

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The problem of analytical description of different properties of effective rotational operators, energy structure, and band and line strengths of near local mode XY_2 plane molecules is discussed on the base of analytical solution of the vibrational Schrödinger equation for such type molecules. As a result, we were able to connect with each other in the form of analytical formulas an effective rotational, centrifugal, resonance interaction parameters. Influences of
the deviation from the strict local mode approach (expended local mode) and of the presence of Fermi-type interactions on the above general results are analysed. Local mode approach is further derived for determination of relations between high order anharmonic spectroscopic parameters. As a illustration, the H_2Se molecule is considered.