# THEORY OF $r_m^{(2)}$ STRUCTURAL PARAMETERS

JAMES K. G. WATSON, *Steacie Institute for Molecular Sciences, National Research Council, Ottawa, Ontario, Canada K1A OR6.*

The $r_m^{(2)}$ method described in the previous paper is discussed on the assumption that the isotopic changes in $\epsilon_0$ are adequately represented by the equation $\Delta\epsilon_0 = \sum_i (\partial\epsilon_0/\partial m_i)\Delta m_i$. A formula is calculated for $\partial\epsilon_0/\partial m_i$ in terms of the basic potential constants and coupling parameters of the molecule. Use of this formula then gives an approximate expression for the $[r_m^{(2)} - r_e]$ differences in the structural parameters. Numerical tests of this expression are in progress.