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Distribution of Vibrational Energy Levels of Protein Molecular Chains

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Abstract: The distributions of the quantum vibrational energy levels of the protein molecular chain are found by the discretely nonlinear Schrödinger equation appropriate to protein obtained from the Davydov theory. The results calculated by this method are basically consistent with the experimental values. Furthermore, the energy spectra at high excited states have also been obtained for the molecular chain which is helpful in researching the properties of infrared absorption and Raman scattering of the protein molecules.

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