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Collective Behavior of Water Molecules in Microtubules

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A theoretical model for the description of a collective behavior of water molecules as an assembly of two-level quantum biological system is proposed. In this model, MicroTubules are considered as quantum cavities. Their role is to provide a single mode of biophoton field, in such a way that water molecules to be considered not as independent individuals, but rather as whole, in this manner water molecules are embedded in and interacting with a common radiation field. In the model proposed, collective behavior of water molecules is characterized by coherent water states analogous to Bloch states, whose main feature is to trap biophotons in a collective fashion. Finally some applications to electroencephalography are considered.