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Quantum cooperative process in living cells ROBERT FINKEL, St. John's University — A model of a quantum cooperative process has accurately accounted for various quantitative observations.[1] That investigation considered chemical oscillations to be generated by generic quantum oscillators producing discrete quanta with well-defined energy and wavelength. The current work extends the theory by postulating that these oscillations arise from repetitive electron transfers in membranes. We find this produces a limit cycle completely consistent with the hypothetical generic oscillators, accurately reproduces the results of microwave irradiation experiments on yeast, and addresses limits for the smallest possible cell sizes. Questions of coherence in cells and implications for molecular information transfers are briefly considered. [1]R.W. Finkel, *J. Theor. Biol.* in press.

Robert Finkel
St. John's University

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