

CHIRAL INTERACTION AND BIOMOLECULAR EVOLUTION

G. Gilat

Department of Physics, Technion - Israel Institute of Technology,
Haifa 32000, Israel

ABSTRACT

Recent developments in the concept of chiral interaction open now new options and dynamical possibilities for biomolecules which have so far been overlooked. A few of these possibilities are mentioned, such as the control mechanism of enzymatic activity and the role played by non-ergodicity in evolutionary processes. It is shown that chiral interaction, being a surface phenomenon, does not obey Barron's symmetry constraints, which are suitable for force fields present in bulk interactions. In particular, the situation at the ocean-air surface in the prebiotic era is described, as well as the possible role played by chiral interaction in conjunction with the terrestrial magnetic field normal to the ocean surface, which could have lead to a process of deracemization at the ocean-air interface.