

21 novembre 2012

ore 15.00

Sala Azzurra

Palazzo della Carovana

Piazza dei Cavalieri

Colloqui della Classe di Scienze

Anno Accademico 2012/2013



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Chiral molecules revisited

ABSTRACT

According to Hund (1927) quantum mechanics forbids the existence of stable optically active (chiral) molecules as they violate the invariance under parity of the Hamiltonian. This paradox has attracted much attention ever since and there is not yet a universally accepted explanation. I will contend that spontaneous symmetry breaking provides a qualitative and quantitative explanation. A second paradox concerning chiral molecules is the predominance of left handed molecules in living matter. This reminds of the predominance of matter over antimatter in the universe. I shall briefly discuss how spontaneous symmetry breaking in non equilibrium may offer a clue.