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RECENT APPLICATIONS OF QUANTUM IDEAS OUTSIDE MICROSCOPIC WORLD

Fabio Bagarello

University of Palermo, Palermo, Italy

ABSTRACT

It is nowadays believed by many authors that quantum tools, and quantum ideas, can be relevant in the understanding of several macroscopic systems. Many aspects of this connection have been discussed in recent years, with different techniques and strategies. This growing interest is mainly due to its many technical and philosophical consequences, but it is also related to the pretty good results which can be found using ideas outside its standard realm.

In my talk I will briefly review some recent applications of quantum ideas to few systems of different nature. In particular, I will describe some applications to biological systems and to decision making. More in details, I will describe how ladder operators satisfying the canonical commutation or anti-commutation relations can be used in the analysis of some cancer proliferation. As a second application, I will show how a spin Hamiltonian can be used in a simple problem of decision making, where a large group of people are asked to reach a common decision.

Keywords: quantum idea, microscopic world, cancer proliferation, decision making

Corresponding Author E-Mail: fabio.bagarello@unipa.it