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**Main Interests:** Foundation of Quantum Mechanics; Quantum Field Theory; Space-Time at Planck Scale; Group Approach in Quantum Cosmology; Systems Theory ;Non-Linear Dynamics; Computation in Biological and Cognitive Systems ( Logical Openness, Sub and Super Turing Systems).

Editor of the Electronic Journal of Theoretical Physics (EJTP)

Gruppo "Scienza Semplice".

Books: "Informazione & Complessità" , (Editor), Bologna 1998;

*Osservando la Sfinge - la realtà virtuale della fisica quantistica*, Di Renzo Editore, Roma (1993 first ed.; 2003 new edition);

Majorana Legacy in Contemporary Physics (Editor)- EJTP- Di Renzo, Roma 2006;

Physics of Emergence and Organization (Editor), EJTP-World Scientific, 2008:

“La Logica Aperta della Mente”, Codice Edizioni, Torino, 2008.

Recent Papers:

1. [arXiv:0801.0887](https://arxiv.org/abs/0801.0887) [pdf]

Title: A Dynamical Model for Information Retrieval and Emergence of Scale-Free Clusters in a Long Term Memory Network

Authors: Ignazio Licata

Comments: 8 pages, 11 figures, 2 tables. Submitted to Emergence: Complexity and Organization

Subjects: Adaptation and Self-Organizing Systems (nlin.AO)

2. [arXiv:0711.2973](https://arxiv.org/abs/0711.2973) [pdf]

Title: Emergence and Computation at the Edge of Classical and Quantum Systems

Authors: Ignazio Licata

Comments: 16 pages

Subjects: Quantum Physics (quant-ph)

3. [arXiv:0705.1173](#) [pdf]

Title: Effective Physical Processes and Active Information in Quantum Computing

Authors: Ignazio Licata

Comments: 10 pages; Added references for sections 2 and 5

Journal-ref: Quantum BioSystems, ISSN 1970-223X

Subjects: Quantum Physics (quant-ph)

4. [arXiv:0705.1084](#) [pdf]

Title: A New Model for the Organizational Knowledge Life Cycle

Authors: Luigi Lella, Ignazio Licata

Comments: 10 pages, 2 figures. To be published in Processes of emergence of systems and systemic properties. Towards a general theory of emergence, Minati G. & Pessa E. (Eds), Springer, 2007

Subjects: Adaptation and Self-Organizing Systems (nlin.AO)

5. [arXiv:0704.0598](#) [pdf]

Title: Evolutionary Neural Gas (ENG): A Model of Self Organizing Network from Input Categorization

Authors: Ignazio Licata, Luigi Lella

Comments: 16 pages, 8 figures

Journal-ref: EJTP, vol.4., No.14 (2007), 31-50

Subjects: Populations and Evolution (q-bio.PE)

6. [arXiv:0704.0563](#) [pdf]

Title: Universe Without Singularities. A Group Approach to De Sitter Cosmology

Authors: Ignazio Licata

Comments: 13 pages

Journal-ref: EJTP, Electronic Journal of Theoretical Physics, Vol.3, No10, 2006, 211-224, "Majorana Legacy in Contemporary Physics", Ignazio Licata Ed., EJTP/Di Renzo, Roma, 2006

Subjects: General Physics (physics.gen-ph)

7. [arXiv:0704.0042](#) [pdf]

Title: General System theory, Like-Quantum Semantics and Fuzzy Sets

Authors: Ignazio Licata

Comments: 12 pages, 3 figures

Subjects: Quantum Physics (quant-ph)

8. [arXiv:nlin/0703066](#) [pdf]

Title: Physics and Logical Openness in Cognitive Models

Authors: Ignazio Licata

Comments: 8 pages, submitted to Foundation of Science

Subjects: Adaptation and Self-Organizing Systems (nlin.AO)