



UNIVERSITÀ DELLA CALABRIA

DIPARTIMENTO DI
MATEMATICA
E INFORMATICA

Avviso di Seminario

Giovedì 11 dicembre 2014 – ore 11:00

Aula MT10 – cubo 30B primo piano

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terrà un seminario dal titolo:

A pragmatic interpretation of quantum logic

Il Direttore del Dipartimento
prof. Nicola LEONE

Abstract:

Scholars have wondered for a long time whether the language of quantum mechanics introduces a quantum notion of truth which is formalized by quantum logic (QL) and is incompatible with the classical (Tarskian) notion. But one can show that QL can be interpreted as a pragmatic language of *assertive* formulas, which formalize statements about physical systems that are either *empirically justified* or *empirically unjustified* in the framework of quantum mechanics [1]. According to this interpretation, QL formalizes properties of the metalinguistic notion of *empirical justification* within quantum mechanics rather than properties of a quantum notion of truth [1, 2]. This conclusion agrees with a general integrationist perspective that interprets nonstandard logics as theories of metalinguistic notions different from truth, thus avoiding incompatibility with classical notions and preserving the globality of logic. Moreover, it suggests some elucidations of the notion of truth in quantum mechanics.

Bibliography:

- [1] Garola, C. (2014). A Pragmatic Interpretation of Quantum Logic. *ArXiv: 1409.0194v2 [quant-ph]*.
- [2] Garola, C. and Sozzo, S. (2013). Recovering Quantum Logic within an Extended Classical Framework. *Erkenn.* 78, 399–419.