



UNIVERSIDADE FEDERAL DE SANTA CATARINA
CENTRO DE FILOSOFIA E CIÊNCIAS HUMANAS
PROGRAMA DE PÓS-GRADUAÇÃO EM FILOSOFIA

2017.2

FIL 3102 --- TÓPICOS ESPECIAIS EM FILOSOFIA DA CIÊNCIA
Terças-Feiras 14:20h(4)

Décio Krause, Prof.

METAPHYSICS OF NON-INDIVIDUALITY

(part of the course will be in English)

1. Physical Aspects of the Problem: Quantum Indiscernibility and Non-Individuality
2. Metaphysical Aspects of Individuality and Non-Individuality.
3. Formal Aspects of Identity and Individuality
4. Classical Mathematics and Identity
5. Quasi-set Theory: the mathematics of non-individuals.
6. Formal structure for non-relativistic quantum mechanics.
7. Fock spaces and a first approximation to quantum field theories.
8. Further Discussions

Bibliografia Básica

1. Arenhart, J. R. B. & Krause, D. (2014), Why non-individuality: A discussion on individuality, identity, and cardinality in the quantum context. *Erkenntnis* 79 (1): 1-18.
2. French, S. and Krause, D. (2006), *Identity in Physics: A Historical, Philosophical, and Formal Analysis*. Oxford: Oxford Un. Press.
3. Krause, D. and Arenhart, J. R. B. (2012), PHILOSOPHY OF QUANTUM MECHANICS: QUANTUM (NON-) INDIVIDUALITY , in A Panaromic View of the History and Philosophy of Science , [Ed. Pablo Lorenzano], in Encyclopedia of Life Support Systems(EOLSS), Developed under the Auspices of the UNESCO, Eolss Publishers, Paris, France, [<http://www.eolss.net>]
4. Krause, D. and Arenhart, J. R. B. (2016), Individuality, Quantum Physics, and a Metaphysics of Non-individuals: The Role of the Formal. In Alexandre Guay and Thomas Pradeu (eds.), *Individuals Across the Sciences*. Oxford: Oxford Un. Press, pp. 61-81.
5. Krause, D. and Arenhart, J. R. B. (2016), *The Logical Foundations of Scientific Theories: Languages, Structures, and Models*. London: Routledge.
6. Krause, D. and Arenhart, J. R. B. (2016), A logical account of quantum superpositions. In Aerts, D., de Ronde, C., Freytes, H. and Giuntini, R. (eds.), *Probing the Meaning of Quantum Mechanics: Superpositions, Dynamics, Semantics and Identity*. Singapore: World Scientific, pp. 44-59.