



Epistematics and its applications in physical modelling and predictive mapping under conditions of uncertainty

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Epistematics is a field of scientific inquiry that results from the fusion of human teleology and evolutionary epistemology, a fusion that can be very fruitful in the action study of real-world open systems. It institutes a broad framework in which different sets of mental entities (theories-techniques-thinking modes) describing constituent phenomena in individual scientific disciplines are integrated and then expressed in terms of a set of mathematical equations. The framework involves a classification of sorts of knowing, a ranking of these sorts by reference to some reliability standards, and an uncertainty characterization (conceptual vs. technical). A problem solution constructed by brain activity is not separate from its function based on consciousness, intention, mental causation and subjectivity of states. Applications are considered in which Epistematics provides spatiotemporal dependence representation and multi-sourced uncertainty assessment of constituent and composite phenomena. An important function of Epistematics is that it can help connecting formal theories with nature. Therefore, instead of pursuing knowledge in depth but in relative isolation, in Epistematics knowledge can be pursued in depth and integrated in breadth.