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**Describing the macroscopic world: closing the circle within the dynamical reduction program.** (English) [Zbl 1222.81058](#)  
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Summary: With reference to recently proposed theoretical models accounting for reduction in terms of a unified dynamics governing all physical processes, we analyze the problem of working out a worldview accommodating our knowledge about natural phenomena. We stress the relevant conceptual differences between the considered models and standard quantum mechanics. In spite of the fact that both theories describe systems within a genuine Hilbert space framework, the peculiar features of the spontaneous reduction models limit drastically the states which are dynamically stable. This fact by itself allows one to work out an interpretation of the formalism which makes it possible to give a satisfactory description of the world in terms of the values taken by an appropriately defined mass density function in ordinary configuration space. A topology based on this function and which is radically different from the one characterizing the Hilbert space is introduced, and in terms of it the idea of similarity of macroscopic situations is precisely defined. Finally, the formalism and the interpretation are shown to yield a natural criterion for establishing the psychophysical parallelism. The conclusion is that, within the considered theories and at the nonrelativistic level, one can satisfy all sensible requirements for a completely satisfactory macro-objective description of reality.

**MSC:**

**81P05** General and philosophical questions in quantum theory

Cited in **1** Review  
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