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# A perspectival version of the modal interpretation of quantum mechanics and the origin of macroscopic behavior

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## Abstract

We study the process of observation (measurement), within the framework of a 'perspectival' ('relational', 'relative state') version of the modal interpretation of quantum mechanics. We show that if we assume certain features of discreteness and determinism in the operation of the measuring device (which could be a part of the observer's nerve system), this gives rise to classical characteristics of the observed properties, in the first place to spatial localization. We investigate to what extent semi-classical behavior of the object system itself (as opposed to the observational system) is needed for the emergence of classicality. Decoherence is an essential element in the mechanism of observation that we assume, but it turns out that in our approach no environment-induced decoherence on the level of the object system is required for the emergence of classical properties.

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