Identical Particles and Weak Discernibility

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Abstract

Saunders has recently claimed that ``identical quantum particles'' with an anti-symmetric state (fermions) are weakly discernible objects, just like irreflexively related ordinary objects in situations with perfect symmetry (Black's spheres, for example). Weakly discernible objects have all their qualitative properties in common but nevertheless differ from each other by virtue of (a generalized version of) Leibniz's principle, since they stand in relations an entity cannot have to itself. This notion of weak discernibility has been criticized as question begging, but we defend and accept it for classical cases likes Black's spheres. We argue, however, that the quantum mechanical case is different. Here the application of the notion of weak discernibility indeed is question begging and in conflict with standard interpretational ideas. We conclude that the introduction of the conceptual resource of weak discernibility does not change the interpretational status quo in quantum mechanics.

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