

Contextuality of general probabilistic theories



Abstract: Contextuality refers to the idea that context-independent classical models for some measured statistics are infeasible. There are two major approaches to construct models to explain the statistics collected in experiments. It is possible to adopt an ontic view and construct a classical probabilistic model, aka an ontological model. Or, one can take an operational position and construct an operational theory that (in principle) attempts to be modest and make no assumptions about ontic properties of the system. Such minimalist operational theories, like quantum mechanics in its orthodox interpretation, are captured within the framework of general probabilistic theories (GPTs). Here, I answer the question what (non)contextuality means for both of these approaches. I'm also particularly interested to understand the structural properties that make a given GPT (non)contextual.