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### Contextuality in Phase Space

We present a general framework for contextuality tests in phase space using displacement operators. First, we derive a general condition that a singlemode displacement operator should fulfill in order to construct Peres-Mermin square and similar scenarios. This approach offers a straightforward scheme for experimental implementations of the tests via modular variable measurements. In addition to the continuous variable case, our condition can be also applied to finite-dimensional systems in discrete phase space, using Heisenberg-Weyl operators. This approach, therefore, offers a unified picture of contextuality with a geometric flavor.

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