General Wigner Transforms Studied by Virtue of Weyl Ordering of the Wigner Operator

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Abstract: By virtue of the property that Weyl ordering is invariant under similar transformations we show that the Weyl ordered form of the Wigner operator, a Dirac δ-operator function, brings much convenience for deriving miscellaneous Wigner transforms. The operators which engender various transforms of the Wigner operator, can also be easily deduced by virtue of the Weyl ordering technique. The correspondence between the optical Wigner transforms and the squeezing transforms in quantum optics is investigated.

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