Quantum Bochner's theorem for phase spaces built on projective representations[1] NINNAT DANGNIAM, CHRISTOPHER FERRIE, Univ of New Mexico — Bochner's theorem gives the necessary and sufficient conditions on a characteristic function such that it corresponds to a true probability density function. In the Wigner phase space picture, quantum Bochner's theorem gives the necessary and sufficient conditions on the quantum characteristic function such that it corresponds to a valid quantum state and such that its Fourier transform is a true probability density. We extend this theorem to discrete phase space representations which possess enough symmetry to define a generalized Fourier transform.

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