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## Computing scattering phase shift of wavepackets in Gross-Neveu model

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We consider the two-flavor Gross-Neveu model and compute the real time evolution of probabilities relevant to the calculation of the scattering phase shift with a digital quantum computer. We demonstrate the different intermediate steps of preparing the ground state, preparing a Gaussian wave packet and performing a Quantum Fourier transform on the quantum device. The phase shift is computed from the time-delays measured from normalized probabilities with and without inter-flavor interaction. Calculating the time evolution during the collision process is desirable since it is difficult to get access to asymptotic states after the interaction.

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