

Figure 1: A line graph showing the time evolution of the probability of finding the system in the state $|0\rangle$. The x-axis is labeled "Time (s)" and ranges from 0 to 140 in increments of 5. The y-axis is labeled $P(0)$ and ranges from 0.0 to 1.0 in increments of 0.1. The graph shows a periodic oscillation starting at 1.0 at $t=0$, reaching 0.0 at approximately $t=20$ s and $t=100$ s, and returning to 1.0 at approximately $t=40$ s and $t=120$ s. The oscillations are slightly damped over time.

