We now discuss briefly the effect of interactions on the expansion, and show that this is negligible compared to the finite ToF effect. When the cloud has just been released from the lattice potential, each on-site wavefunction W_μ expands independently with a characteristic expansion time ω_L^{-1}, until $t \approx t^* = \sqrt{\hbar/(\omega_L E_R)}$ where the wavefunctions expanding from neighboring sites start to overlap. At this time, in the usual situation where $\omega_L t^* \gg 1$, the local density has dropped dramatically by a factor $(\omega_L t)^{-3} \ll 1$. Hence, the interaction energy converts into kinetic energy on the time scale of a few oscillation periods only, and expansion becomes rapidly ballistic. The parameter controlling the importance of interactions is given by $\eta = \frac{U}{\hbar\omega_L} \approx \sqrt{8\pi}\ \frac{a_s n_0}{\lambda_L} \left(\frac{V_0}{E_R}\right)^{1/4}$, with U being the on-site interaction energy. For typical parameters, η is small (for instance $\eta \approx 0.05$ for $V_0 = 10\ E_R$ and the experimental parameters of [3]). Hence, we expect only small corrections to the non-interacting picture of ballistic expansion. This has been confirmed using a variational model of the expanding condensate wavefunction [15]. This model predicts that the "Wannier" envelope expands faster as compared to the non-interacting case, which does not affect the interference pattern, and picks up a site-dependent phase factor formally similar to the Fresnel term discussed previously, but with a very weak prefactor $\eta \ll 1$ which has negligible influence in practice. We conclude that interactions essentially contribute to the expansion of the on-site wavefunctions, without significant dephasing of the interference pattern.