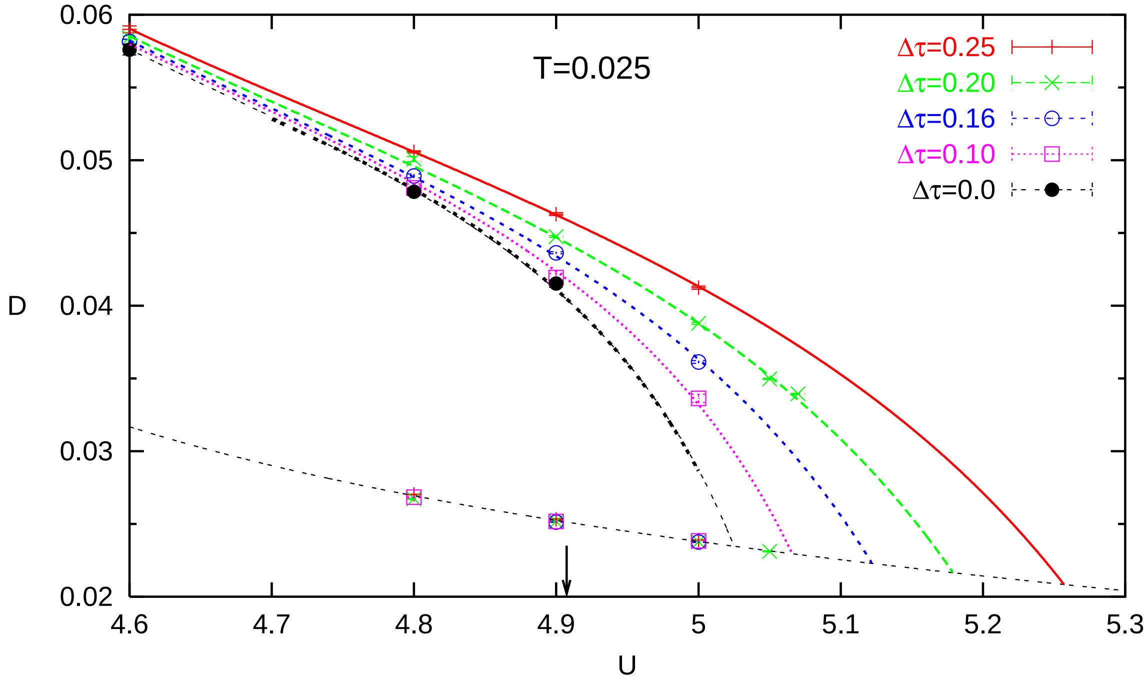

Figure 3.40: Double occupancy for $T = 1/40$, analogous to Fig. 3.37.

also within the coexistence region from Fig. 3.38. Note that for $U = 4.75$ (which is also our estimate for U_c, see arrow), the deviation from the insulating curve is significantly smaller for $\Delta\tau = 0.15$ than for $\Delta\tau = 0.2$ and essentially zero already for $\Delta\tau = 0.1$. The quadratic extrapolation for the metallic solution at $U = 4.75$ (solid circle) should already be close enough to U_{c2b} to overestimate the true value of D; our globally systematic fit curve and its "linearized" approximation (thick portion) are more reliable.

The data for $T = 0.031$ presented in Fig. 3.39 follows the expected pattern. Note that all QMC points in the insulator are on the fit curve and that among the metallic solutions, only the point for $U = 4.92$ and $\Delta\tau = 0.16$ shows negative deviations. Since for the same interaction even $\Delta\tau = 0.1$ is on (or slightly above) its fit curve, a remaining convergence error or the influence of a too low number of sweeps is much more likely than an unsuitability of the fit functions. At $U = 4.85$, we have not only included the result of a purely quadratic fit of the metallic solution to $\Delta\tau = 0$ (upper solid circle), but also a least squares fit including a linear term (lower circle) in order to indicate the range suggested by a local analysis. Again, the global fit is seen to be superior since it takes the regular shape observed at all finite $\Delta\tau$ into account and keeps this shape also for $\Delta\tau = 0.0$.

For $T = 0.025$, the most important region for the determination of U_c near $U = 4.9$ (arrow) is already far enough below U_{c2} and U_{c2b} so that an accuracy within the low percent range could also be obtained from regular quadratic extrapolation. The deviation at $U = 4.9$ and $\Delta\tau = 0.1$ apparent in Fig. 3.40 is slightly outside the statistical error bars but is within the range of longer-scale fluctuations (associated