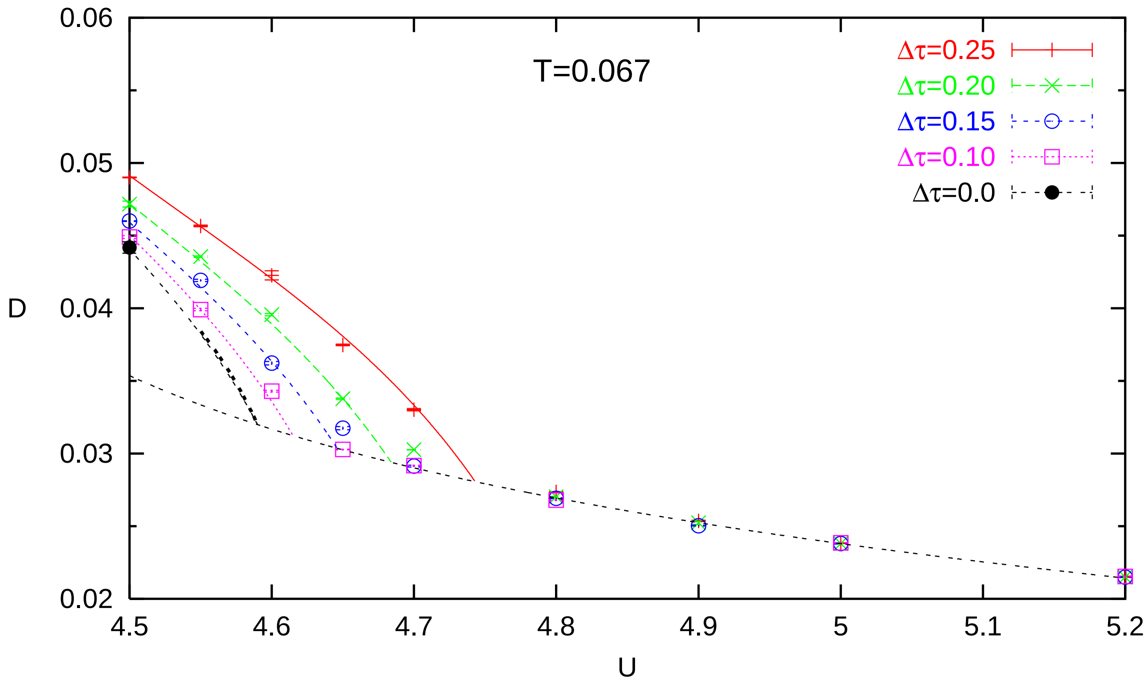

Figure 3.36: Double occupancy for $T = 1/15$. The lowest line follows the temperature-independent law (3.19); all other thin lines are fits according to (3.20) to the QMC data for the metallic region (open symbols) or its extrapolation to $\Delta\tau = 0$ (filled circle). An additional fit (thick line below $U = 4.59$) is related to the linear approximation of a differential equation for $U_c(T)$ (see text and Sec. 3.6). The deviations between QMC data and fit curves at the crossing points U_{c2b} indicate a narrow crossover from metal to insulator.

$B_{T,\Delta\tau}$. Apart from generally fitting the data extremely well, the precise form chosen here stands out by the fact that it would lead to an exactly linear differential equation for the first-order transition line $U_c(T)$ in the limit of vanishing curvature of $E_i(U)$. Except for the close neighborhood of approximately $U_{c2b} - 0.02 \lesssim U \lesssim U_{c2b} + 0.02$ around the crossing points, the QMC data is seen to be reproduced well by the fits in Fig. 3.36. The deviations of the points for $\Delta\tau = 0.15$ at $U = 4.65$ and $\Delta\tau = 0.2$ at $U = 4.7$, however, are significant. This adds further support to our previous conclusion that this temperature is just above the critical temperature. The thick line extending below $U = 4.59$ indicates an additional fit to be used later in a linear differential equation for the first-order line $U_c(T)$.[32]

The analogous data for $T = 0.05$ is presented in Fig. 3.37. The only significant discrepancy between data and fits is seen for the insulating solution at $U = 4.7$. While the deviation might be slightly exaggerated due to using a finite number of sweeps, it is above error bars at all finite $\Delta\tau$. Note, however, that the distance between data and

[32]Since the coexistence region does not extend up to the present temperature, the differential equation will find no application here. Still, some continuity is expected and found with respect to the behavior of D and E, so that the associated data point can still be used for interpolation.