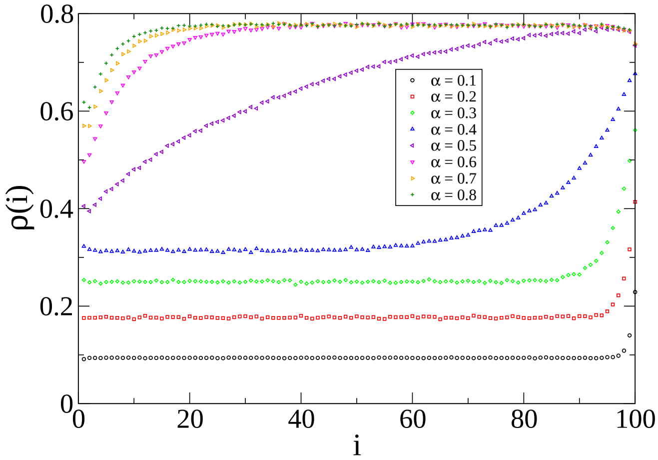

FIG. 3: Density profile for $\beta = 0.4$ obtained via numerical integration of the Langevin equation, for α values as indicated, $L = 100$.

IV. RESULTS

During the simulations we monitor the mean occupation probability $\rho(i)$ at each well i, and the current J, measured by the mean number of particles leaving the system per unit time. Examples of density profiles in the stationary regime ($\rho(i)$ versus i), are shown in Fig. 3 for several values of α, with $\beta = 0.4$. (From here on α and β are given in units of $1/\tau$, where τ is the mean time required for hopping between wells.) This figure shows that the continuous-space model exhibits the same basic phenomenology as the lattice TASEP. For $\alpha \leq 0.4$ the overall density grows with α. On increasing α from 0.4 to 0.5 there is a marked increase in density, but for further increases the density changes very little. While the Langevin simulation (LS) results already suggest that the model exhibits phase transitions, we shall use the more precise results of our MC simulations to perform a detailed analysis. Before proceeding, we verify that the MC method yields results in agreement with the LS. In Fig. 4 we compare density profiles obtained via LS and MC for the same values