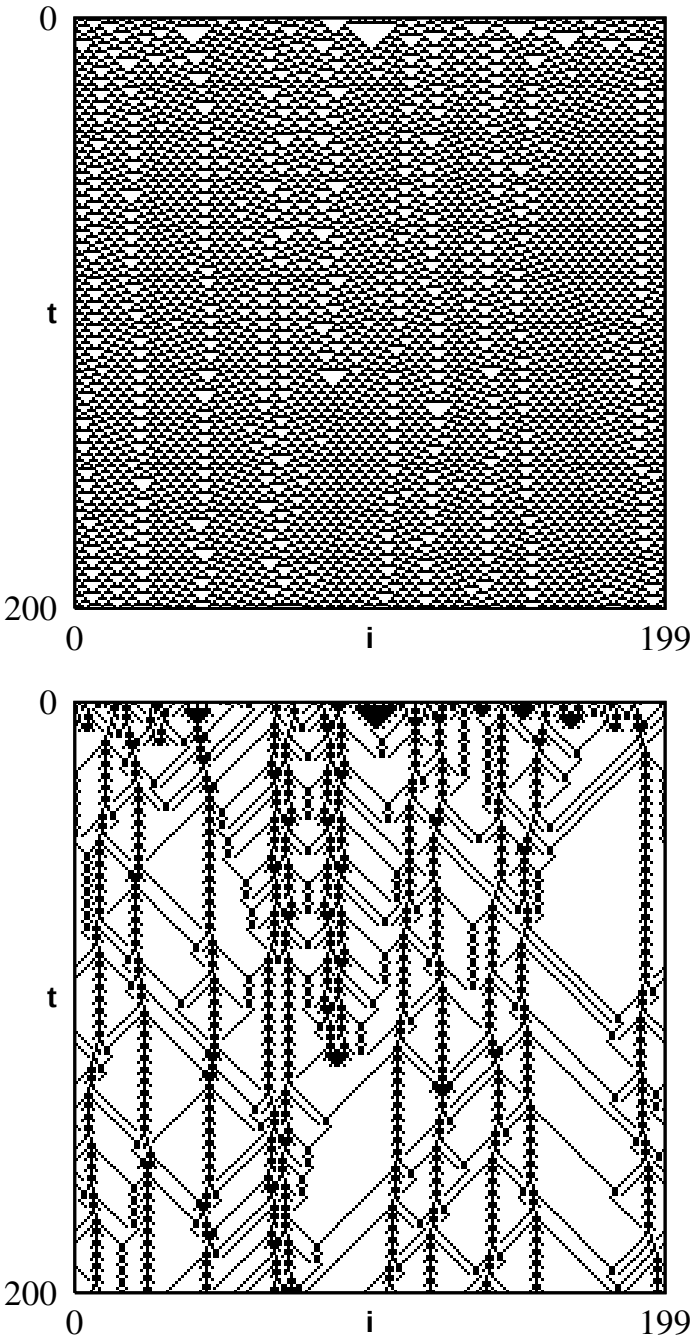

Fig. 10.11 Raw and filtered space-time plots of ECA 54, starting from a random initial condition.

of initially distant dislocations grows as $\left\langle x^2 \right\rangle \approx 2Dt$. The interpretation of this is that the dislocations move as if following a space-time random walk with diffusion constant D, annihilating in pairs when their paths cross.[43] In short, starting from random configurations the dislocations behave like a diffusive gas of annihilating particles. At the end of this chapter, we will return to ECA 18 to investigate the motion of its dislocations in detail.