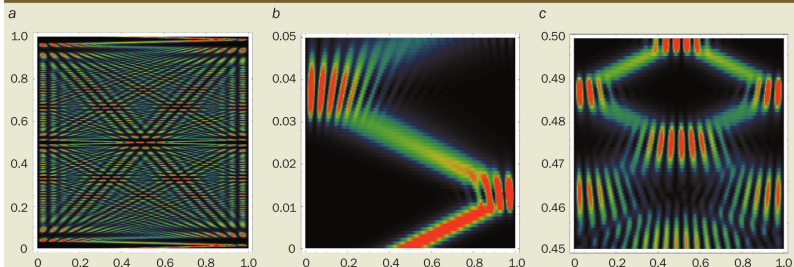


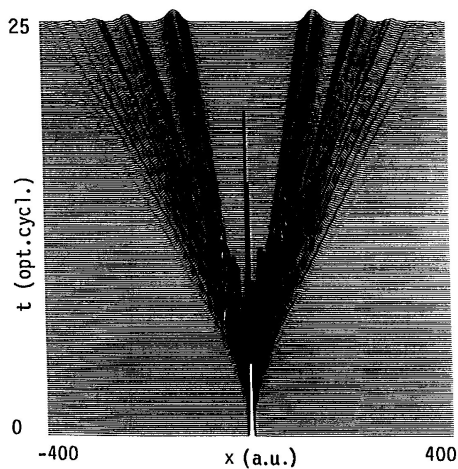
# “Quantum carpets” & “fractional revivals”

## 2 Quantum revivals



Quantum carpets, i.e. plots of probability density, for the propagation of a Gaussian wavepacket in a 1-D box with length  $x=1$ . The horizontal axes are the coordinate  $x$  and the vertical axes are  $t/T$ , where  $t$  is time and  $T$  is the revival time. (a) One period of the quantum carpet; (b) magnification of (a) for short times, showing the initial packet bouncing in the box as it spreads; (c) magnification near  $T_c/2$ , showing fractional revival of two copies of the initial packet. The intensity increases with brightness and saturation, and is colour-coded with hue (maxima represented by red). These carpets are calculated using the equation in the box, for  $w=1/10$ ,  $k=20$  (thus giving a classical period  $T_c=T_c/20$ ).

# Ionisation eines 1D-Modellatoms



Schwengelbeck & Faisal, Phys. Rev. A **50**, 632 (1994)

# Bohmsche Bahnen beim Doppelspalt

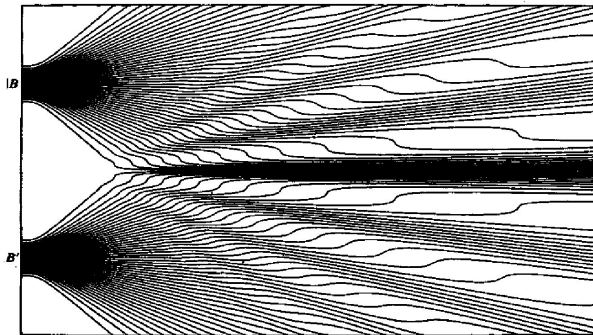


FIG. 1. Two-slit trajectories calculated using the de Broglie–Bohm law (1.1) [3]. The wave function is a superposition of Gaussian packets in the  $y$  direction, centered on  $B$  and  $B'$ , and a plane wave in the  $x$  direction.