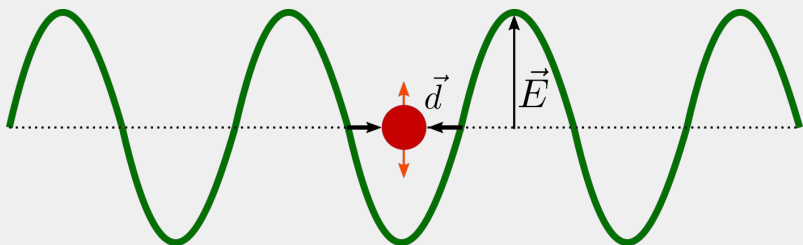


- Trapping of cold atoms by stationary laser waves via dipole induction

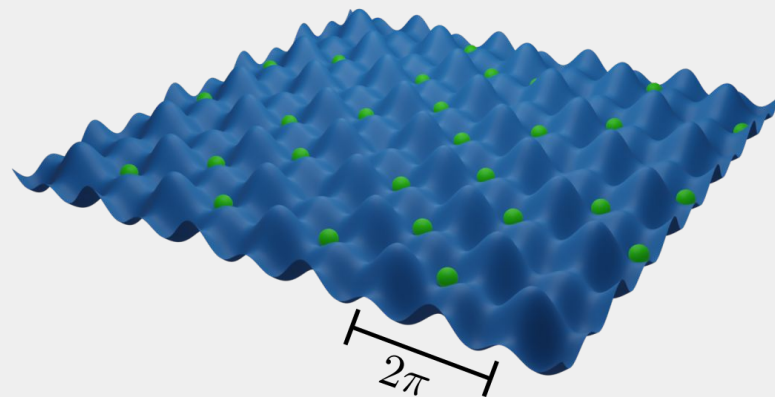


- **Hamiltonian model:**

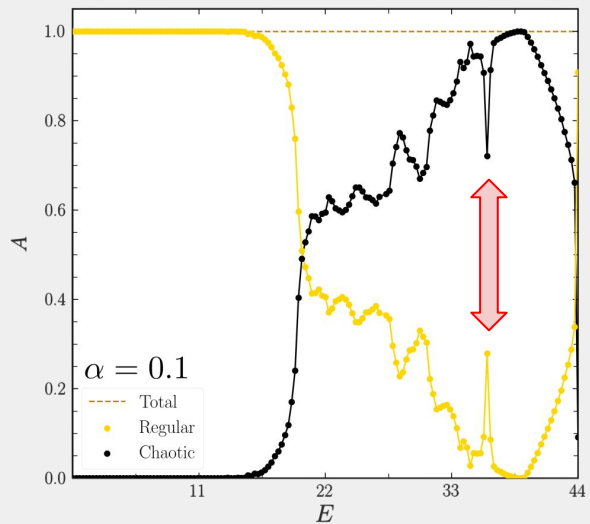
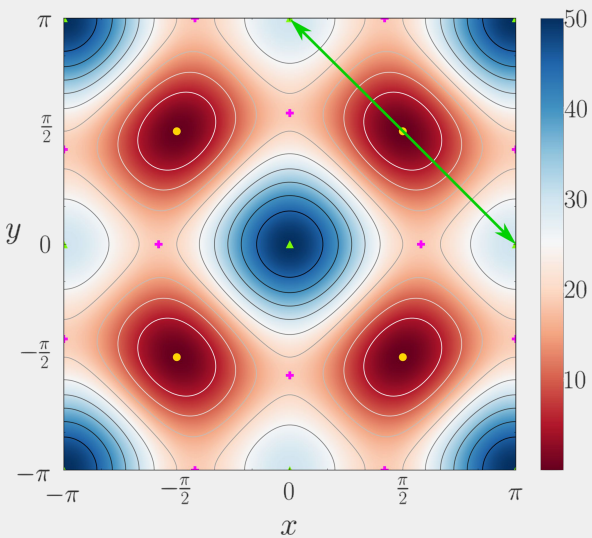
$$H(x, y, p_x, p_y) = p_x^2 + p_y^2 + V(x, y)$$

$$V(x, y) = U (\cos^2(x) + \cos^2(y) + 2\alpha \cos(x) \cos(y))$$

- Periodic potential surface:
  - Translational symmetry
  - Rotational symmetry



- **Chaotic area:** emergence of **stable structures** at energy levels of **unstable points**



- **Island myriad**

