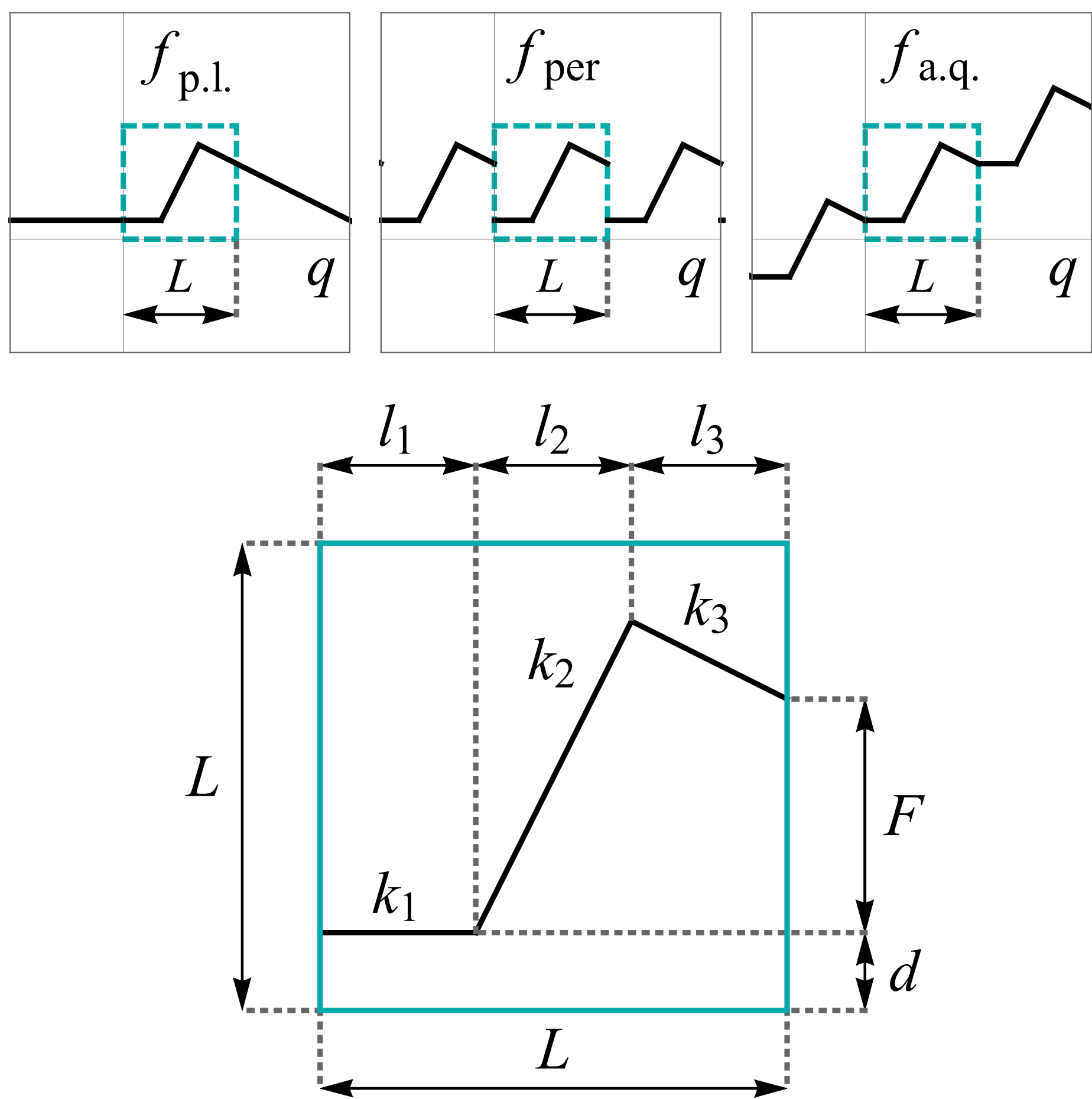


McMillan-Hénon form of the map & Force function



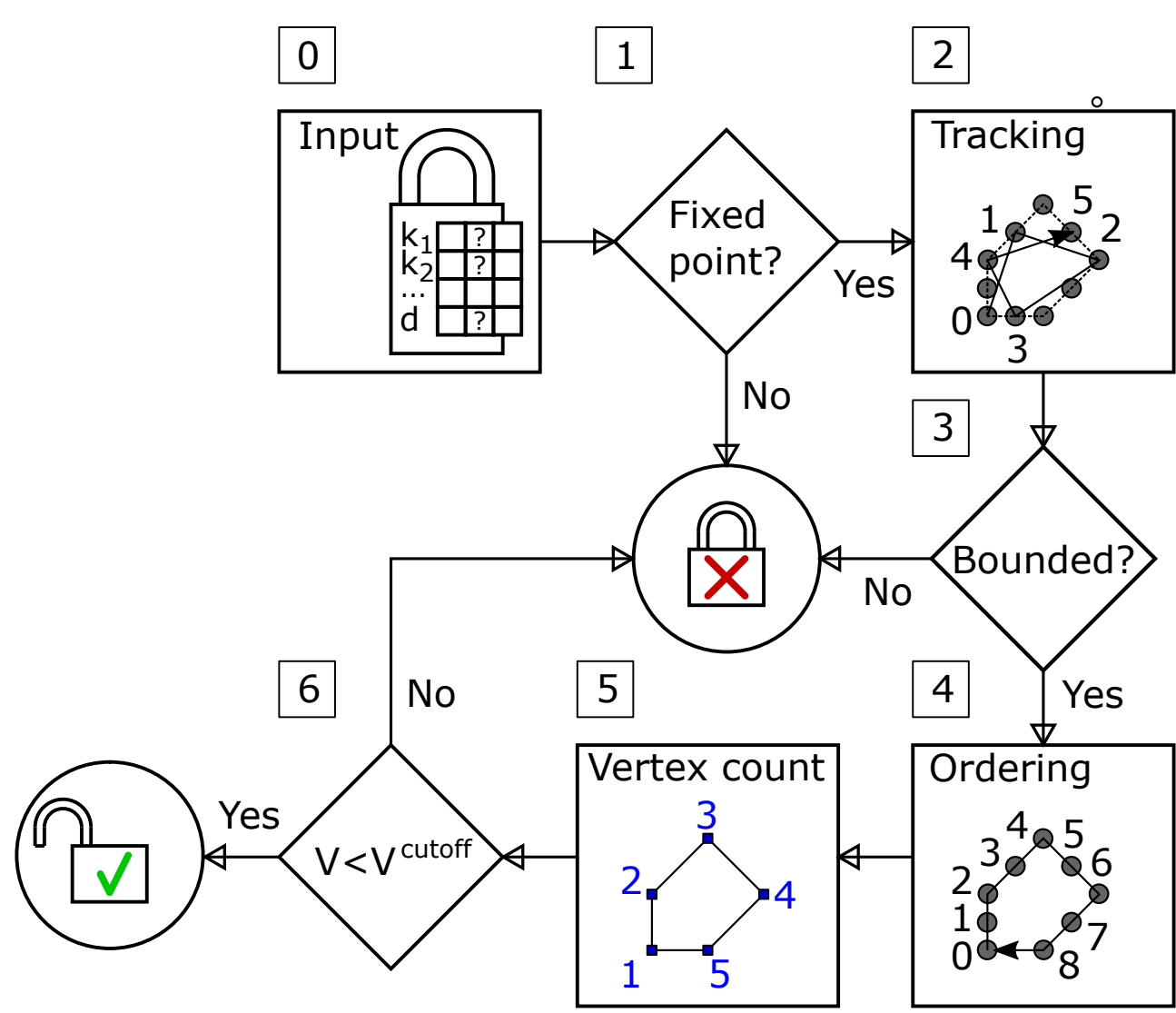
Consider symplectic map of the plane in standard form:

$$q' = p,$$

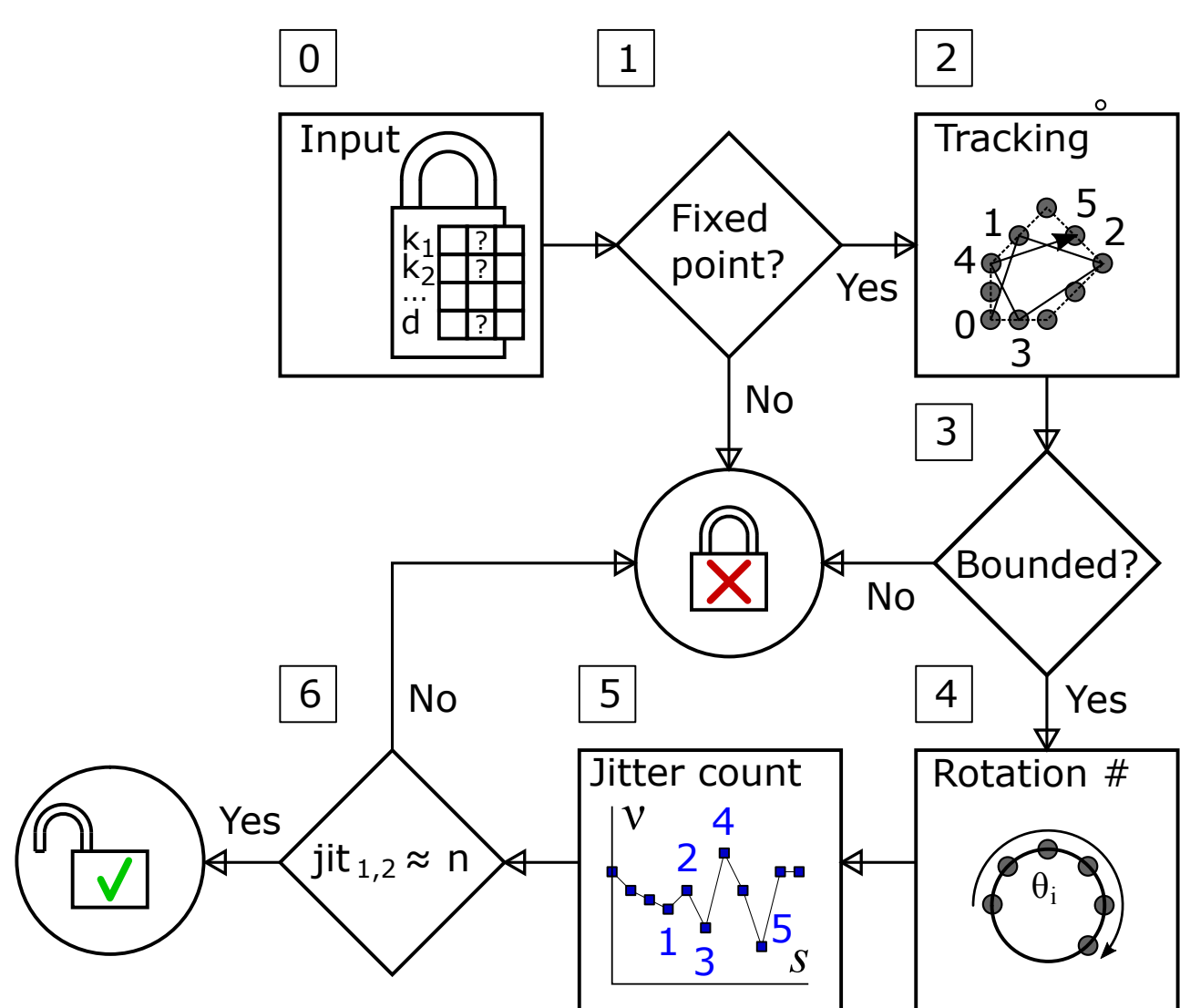
$$p' = -q + f(p),$$

with regular, periodic, mod L and arithmetically quasiperiodic piecewise linear force functions $f(q)$.

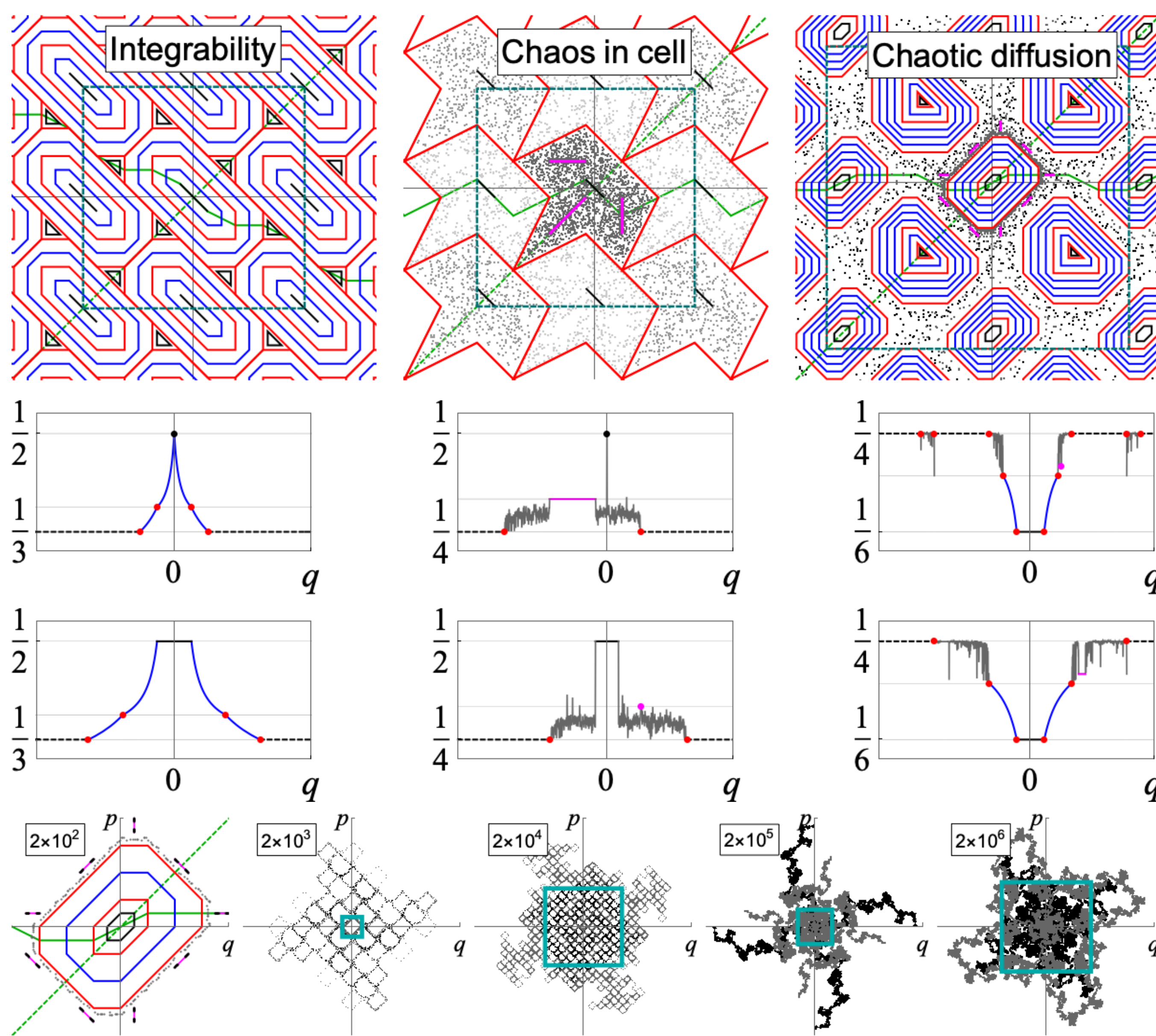
Algorithm #1



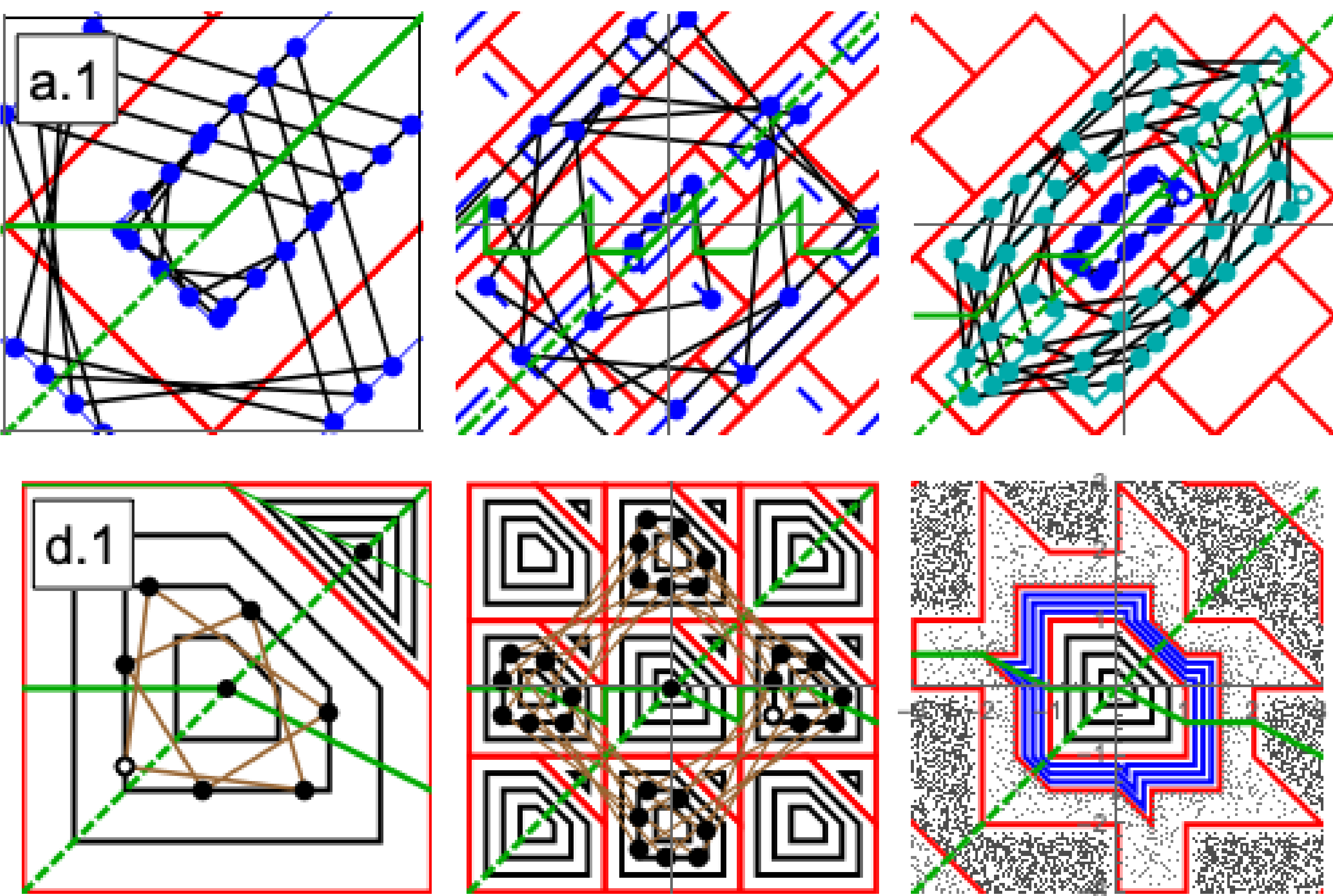
Algorithm #2



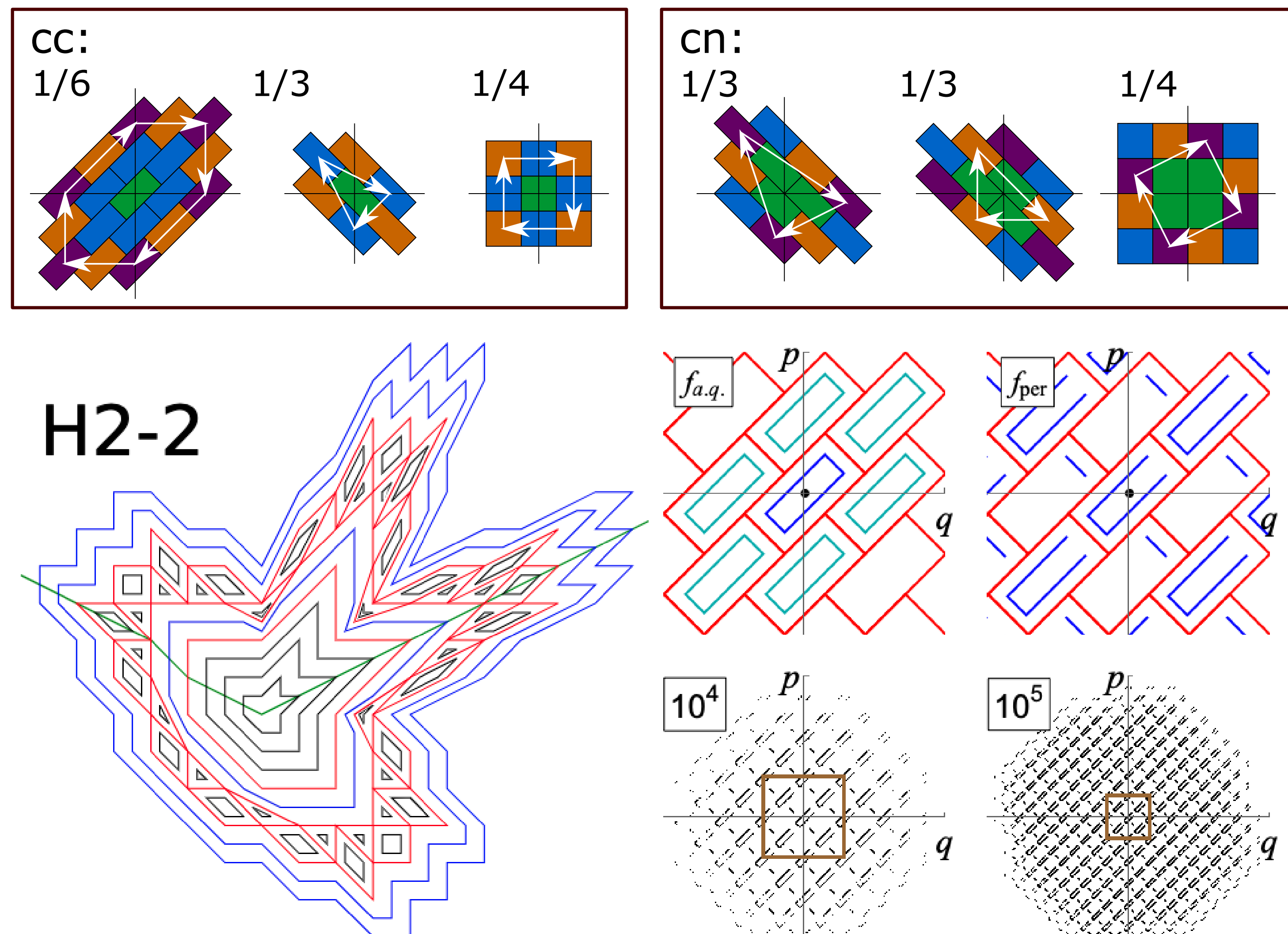
Chaos detection



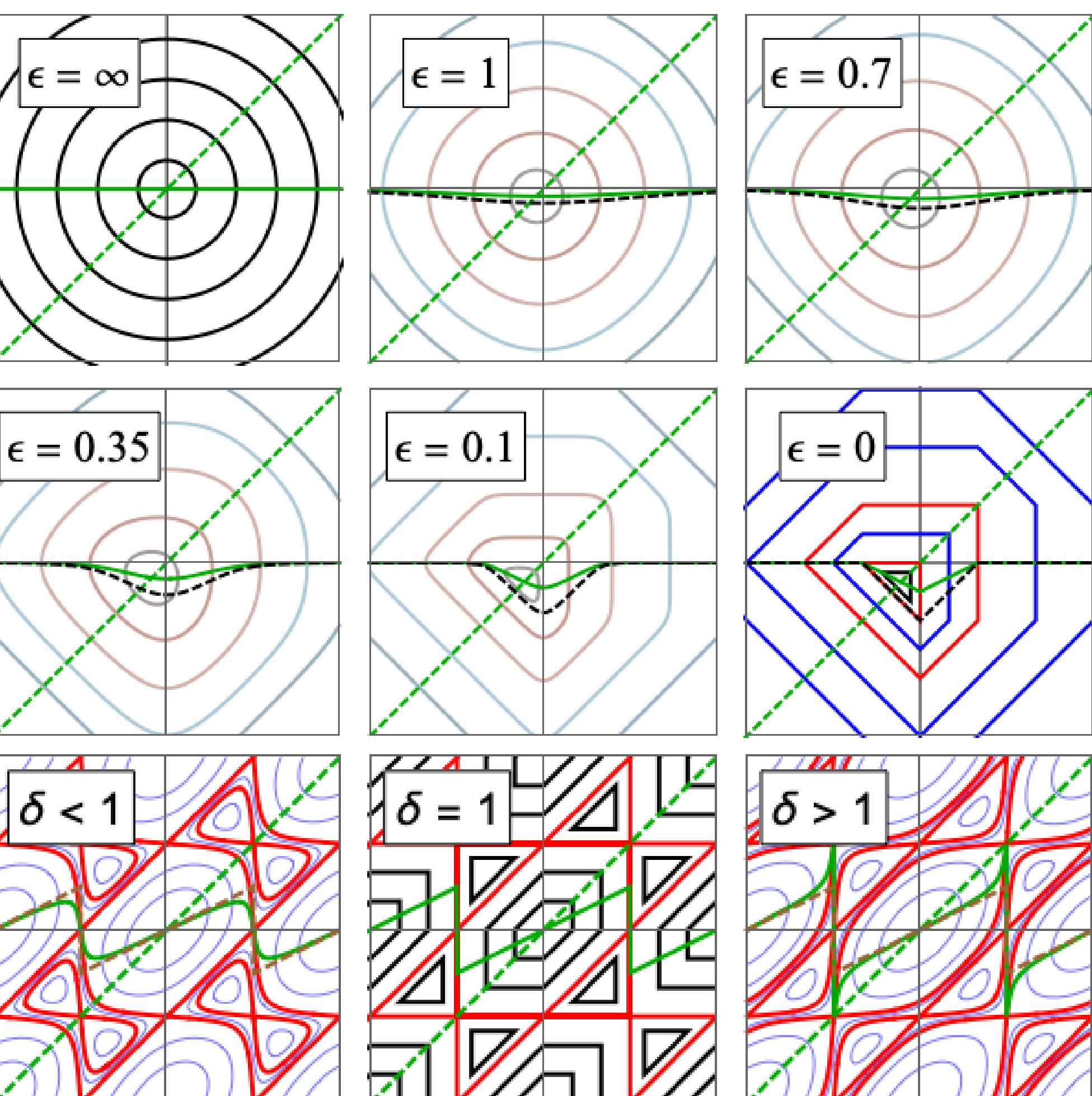
Dynamics on torus & Periodic and arithmetically quasi-periodic $f(q)$



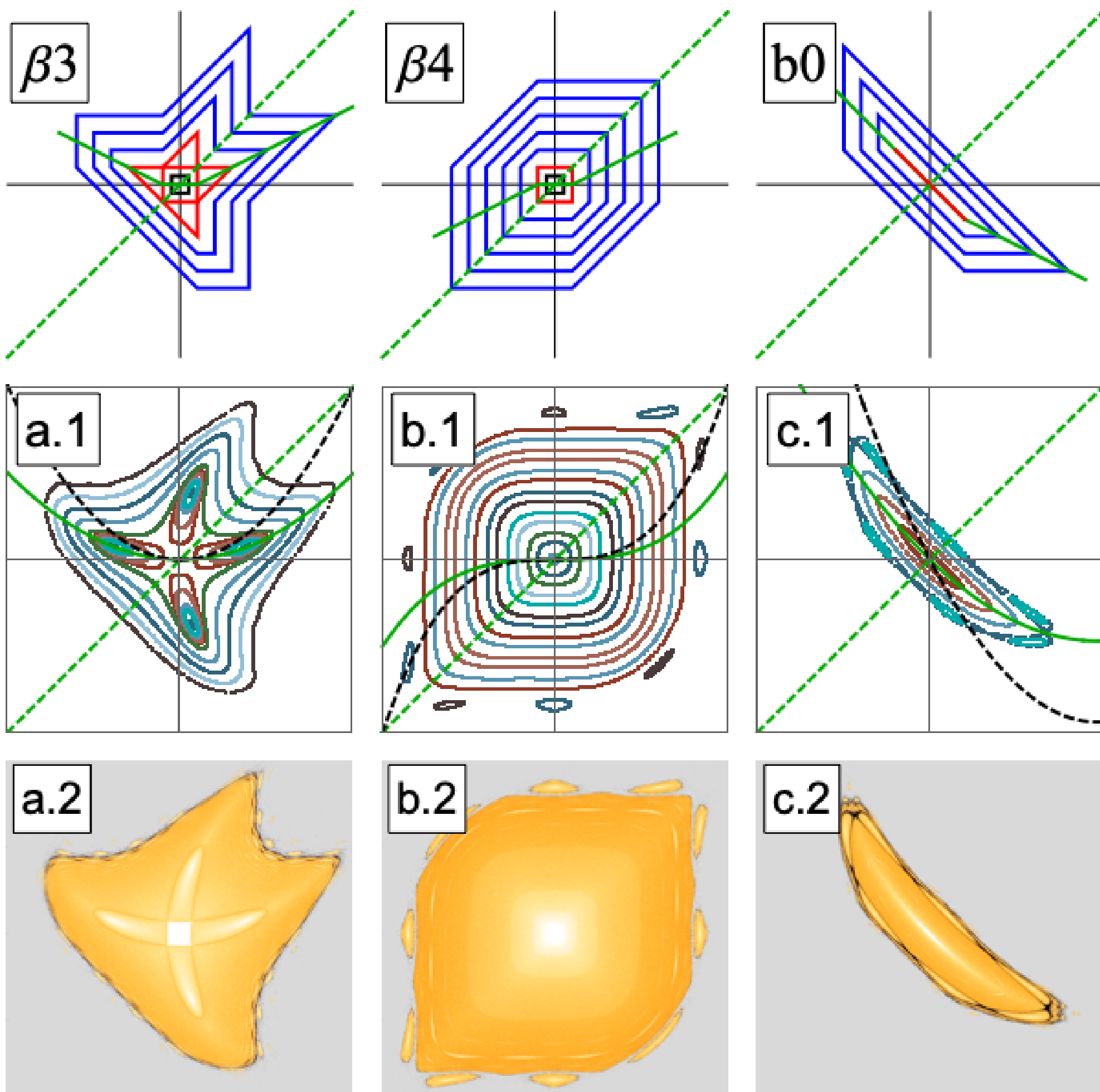
Linear islands, global mode-locking & Integrable diffusion



Connection to Painlevé and McMillan-Suris mappings



Discrete perturbation theory



Smoothering procedure

