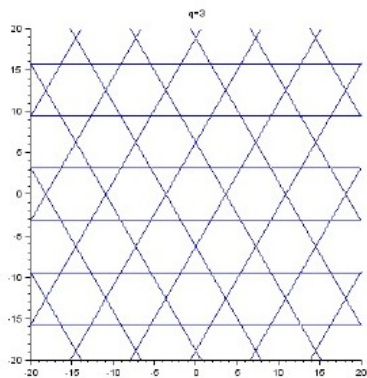
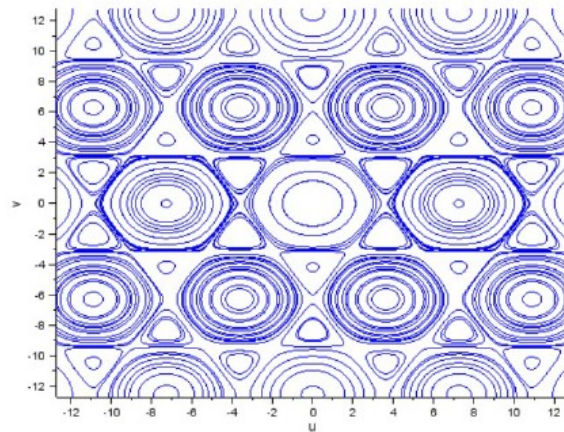


$$H_q(u, v) = -\frac{K}{q} \sum_{j=1}^q \cos(v \cos(j\theta_q) - u \sin(j\theta_q)).$$

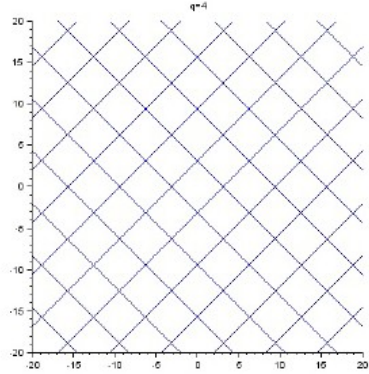
$$\theta_q = \frac{2\pi}{q}.$$



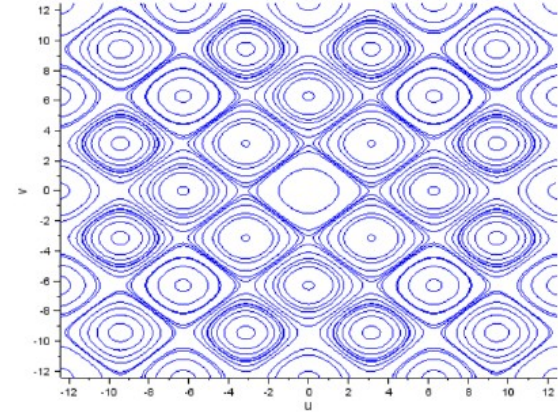
**Figure X.2:** Crystallographic Arnold web for  $q = 3$ .



**Figure X.7:** Crystallographic Arnold web dynamics for  $q = 3$ .



**Figure X.3:** Crystallographic Arnold web for  $q = 4$ .



**Figure X.8:** Crystallographic Arnold web dynamics for  $q = 4$ .

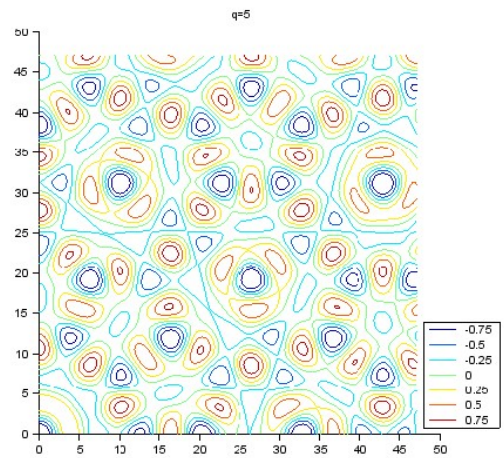


Figure X.4: Some isolines for  $H_5$ .

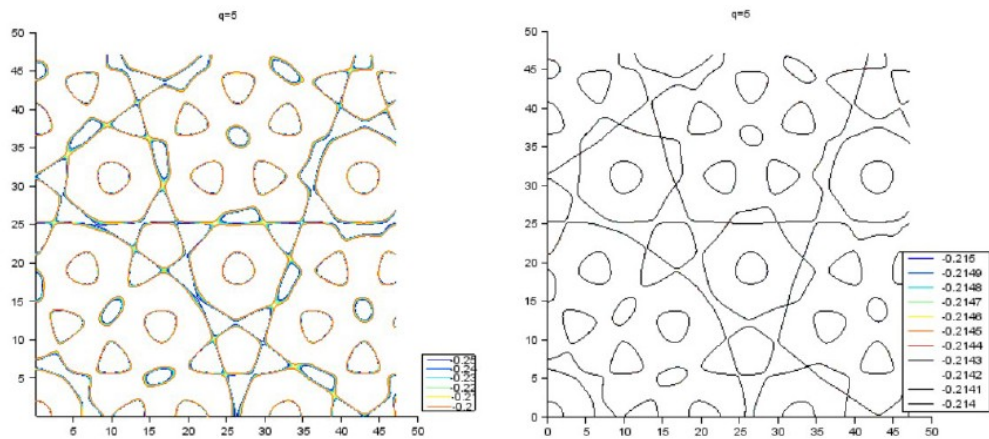
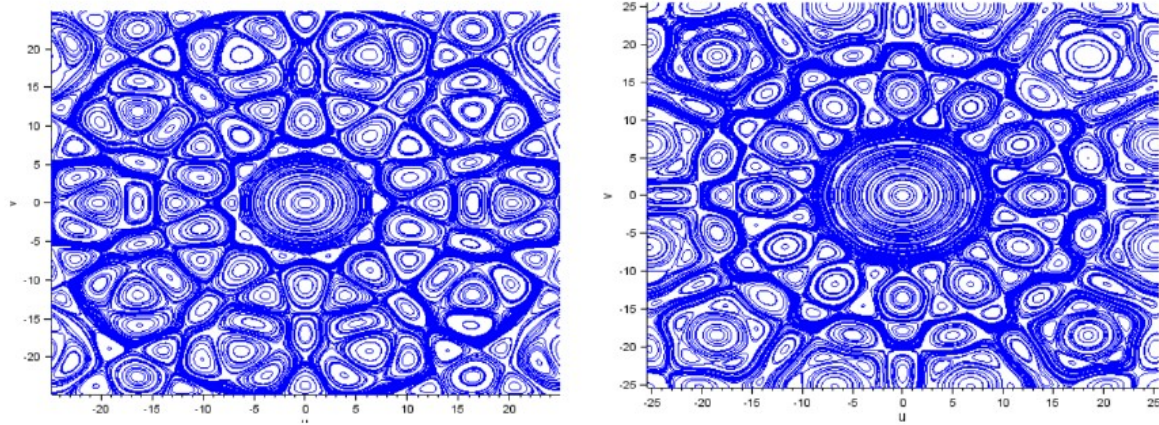


Figure X.5: Some "thick" isolines for  $H_5$ .



**Figure X.6:** Quasi-Crystallographic "thick" Arnold web  $q = 5$  (left) and  $q = 12$  (right).

$$V_q = -\frac{2}{q}K \sum_{i=1}^q \cos(v \cos(j\theta_q) - u \sin(j\theta_q)) \sum_{m=1}^q \cos(m\theta_q(t - j)).$$

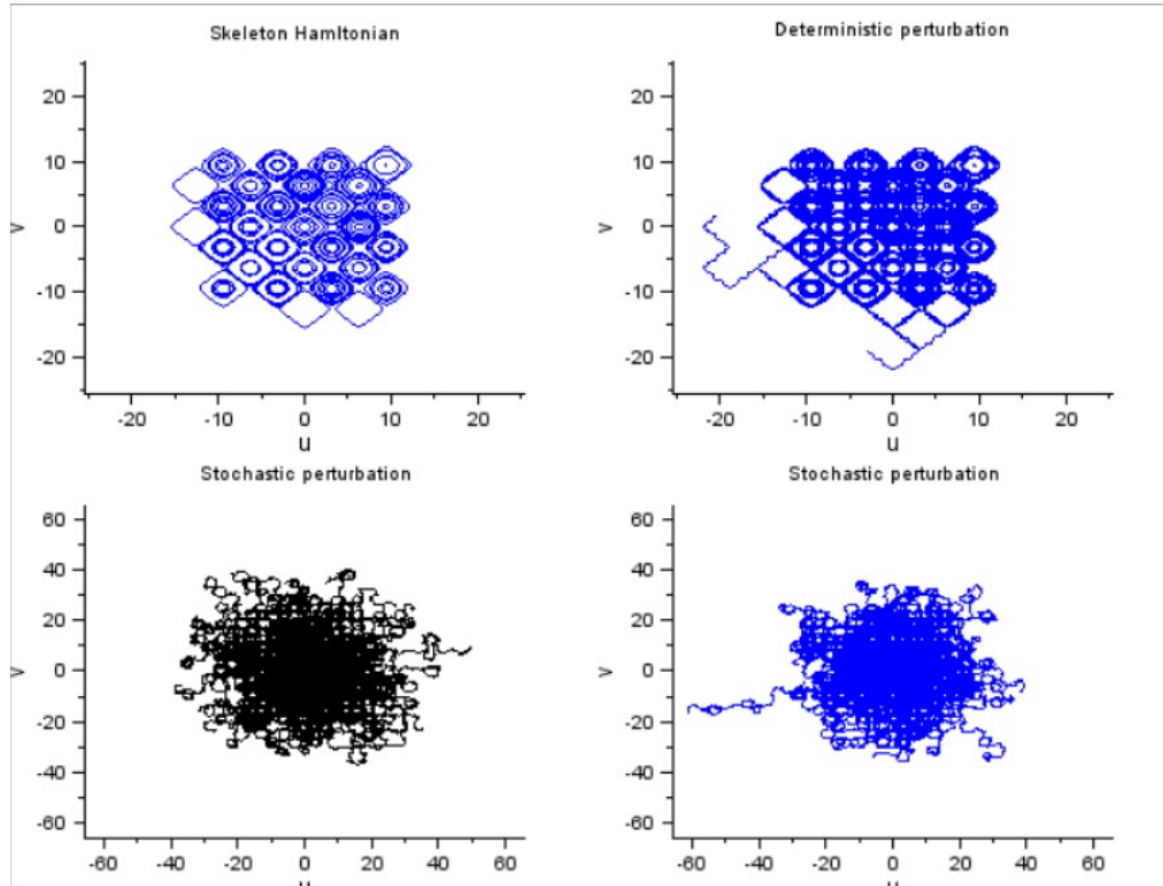


Figure X.10: Perturbations of skeleton Hamiltonian  $q = 4$ .

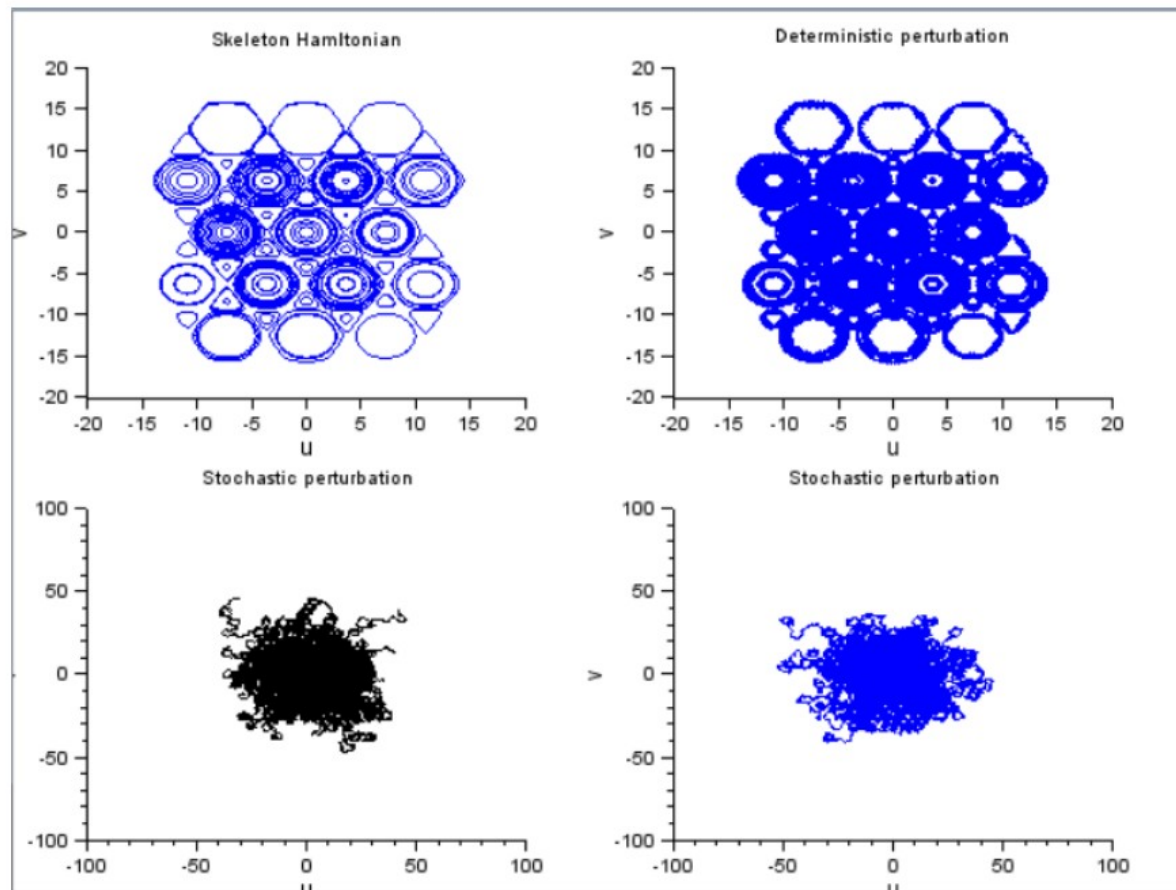


Figure X.9: Perturbations of skeleton Hamiltonian  $q = 3$ .