

echidna SPEC :: plot\_farey

1. Show Farey tree, set fractal pressure profile, . . .

### 0.0.1 Brjuno recurrence

1. The pressure gradient is set by the Brjuno function, as in Marmi and Stark, “On the standard map critical function”, Nonlinearity 5 (1992) 743-761.
2. Given  $\omega$ , then  $B(\omega)$  is constructed by the following recurrence:
  - (a)  $\beta_0 = 1$
  - (b)  $\theta_0 = |x - [x]|$ , where  $[x]$  is the nearest integer to  $x$
  - (c)  $B_0 = -\beta_0 \log \theta_0$
  - (d)  $\beta_n = \beta_{n-1} \theta_{n-1}$
  - (e)  $\theta_n = |\omega_n - [\omega_n]|$ , where  $\omega_n = 1/\theta_{n-1}$
  - (f)  $B_n = B_{n-1} - \beta_n \log \theta_n$
3. The pressure jump across the interface is set  $\delta p = \exp(-B)$

plot\_farey.pro

last modified on 2012-04-18 ;