Programs in this repository allow to reproduce all the figures of the paper

They are organized as follows: there are 5 batch files. Fortran compiler and gnuplot library need.

Under Linux the execution after compiling with gfortran is a.out. Other systems require

a.exe and the change must be performed in the batch files.

[dir: traces_orbit_2D] Bat_wguide_2D_orbit.github

Traces the orbit of the 2D reflection map executing the Fortran program

Map_wguide_2D_github.f One has to set Ich=1 and fix the parameters at the beginning

The main and the subroutines are extensively commented. Formulas for the map and the tangent map are taken from the paper.

The plots are obtained with gnuplot scripts Plot_orb_tan_map.plt , Plot_orb_tan_map1.plt

The figure generated in png are Fig.png (plot in $x/2\pi$, v_x) Fig1.png (plot in $x/2\pi$, $\theta/2\pi$)

[dir: computes_indicators_2D] Bat_wguide_2D.github

Computes indicators RE, LE, REM of the 2D reflection map executing the Fortran program Map_wguide_2D_github.f the same as before.

One has to set Ich=2 and fix the parameters at the beginning

The main and the subroutines are commented. Formulas for the map and the tangent map are taken from the paper.

The plots are obtained with gnuplot scripts Plot_new_LE.plt Plot_new_RE.plt Plot_new_REM.plt

The png generated figures are Fig_LE.png, Fig_RE.png, Fig_REM.png

[dir: computes_indicators_2D] Bat_wguide_4D.github

Computes indicators RE, LE, REM of the 4D reflection map executing the Fortran program Map_wguide_4D_github.f.

The parameters must be fixed in the main at the beginning

The plots are obtained with gnuplot scripts Plot_new_LE.plt Plot_new_RE.plt Plot_new_REM.plt

The png generated figures are Fig_LE.png, Fig_RE.png, Fig_REM.png

[dir: channel_capacity] Bat_Ch_cap_orb_github

Computes the channel capacity versus iteration number n of some orbits for the 2D reflection map executing the Fortran program Ch_cap_orb_github.f.

The subroutines are the same as Map_wguide_2D_github.f . Just the main differs

The plots are obtained with gnuplot scripts Plot_orb.plt, Plot_orb.plt

The png generated figures are Fig.png, Fig1.png.

[dir: channel_capacity_average] Bat_Ch_cap_github

Computes the phase space average of channel capacity versus corrugation amplitude ε of the reflection map executing the Fortran program Ch_cap_github.f .

The subroutines are the same as Map_wguide_2D_github.f . Just the main differs

The plots are obtained with gnuplot script Plot_ch_cap.plt

The png generated figure is Fig_ch.png.