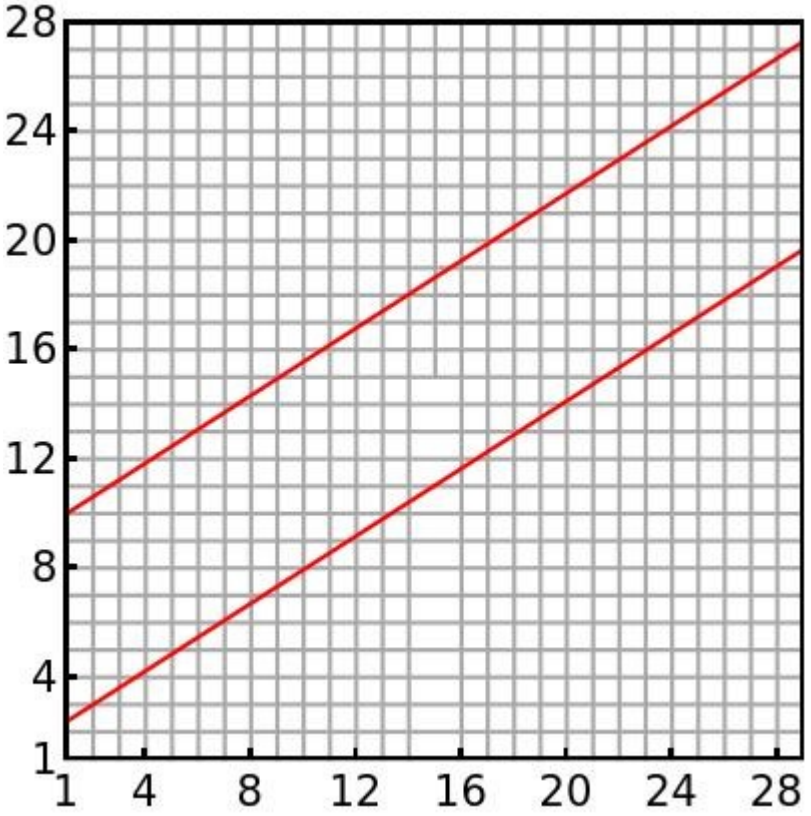
The lattice has a single dislocation core



$$L_x = L_y = 28, l = 14, m_L = 14$$

$$y_{\mathrm{up}} = \frac{2}{\sqrt{5}+1}(x-1) + 10$$

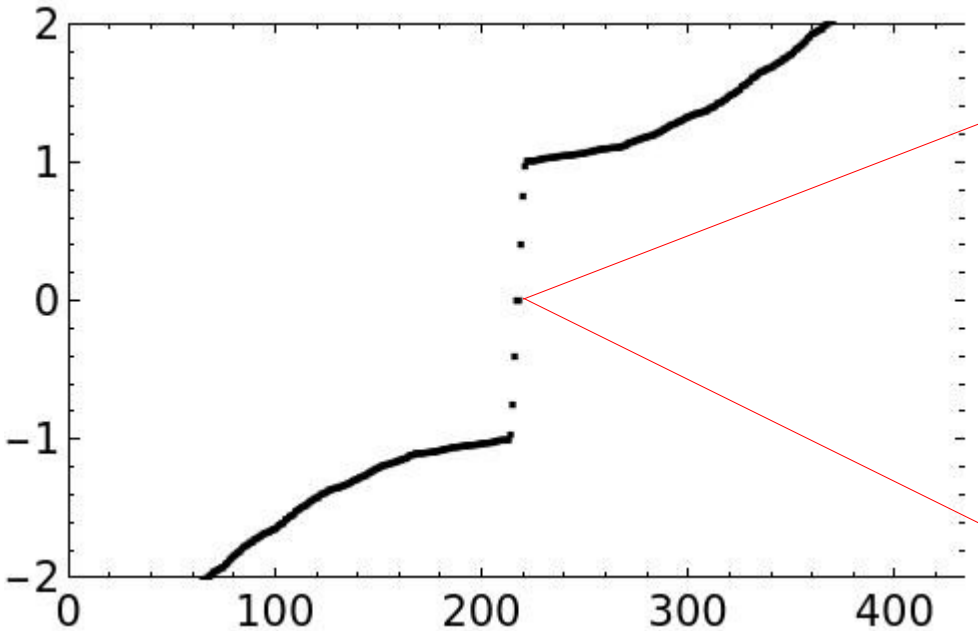
$$y_{\mathrm{down}} = \frac{2}{\sqrt{5}+1}(x-2) + 3$$

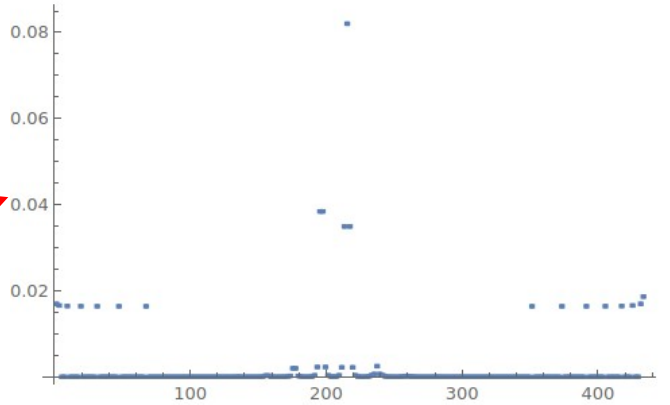
217 sites in the quasicrystal

The lattice dislocation center is at the 108th site of the quasicrystal – orbitals 215 and 216

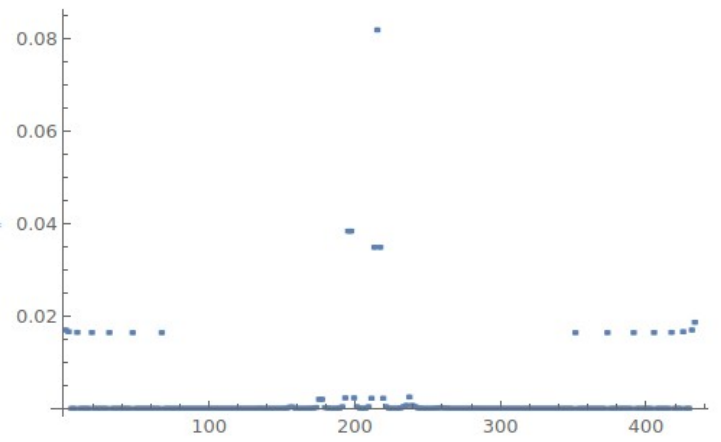
m = -1 (M Phase)

The lattice dislocation center is at the 108th site of the quasicrystal – orbitals 215 and 216





{Highest density at, {{215}}}

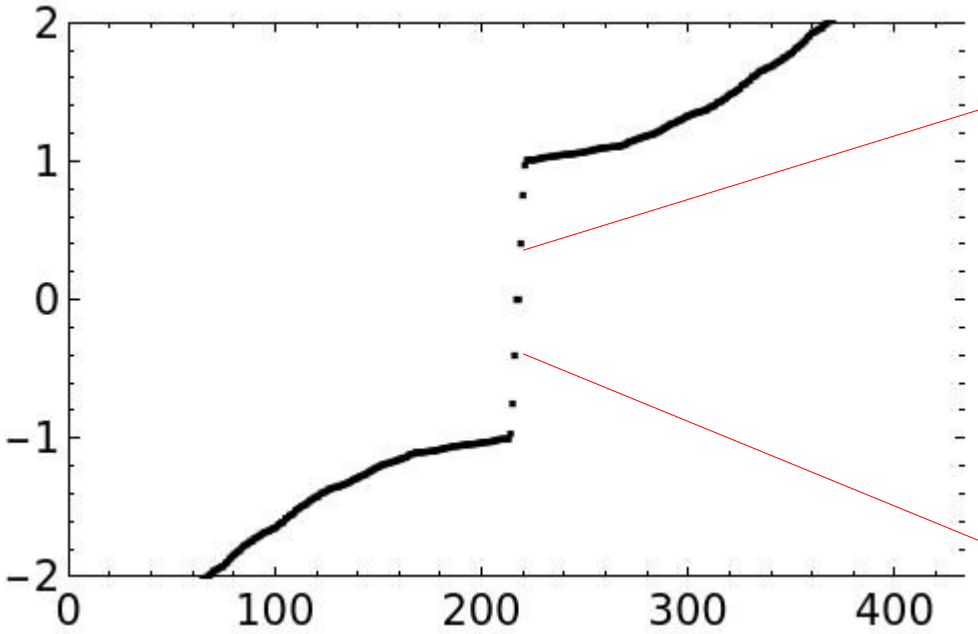


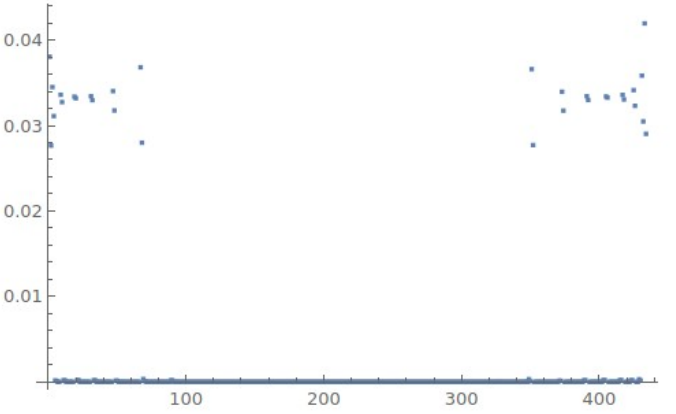
{Highest density at, {{216}}}

E=0

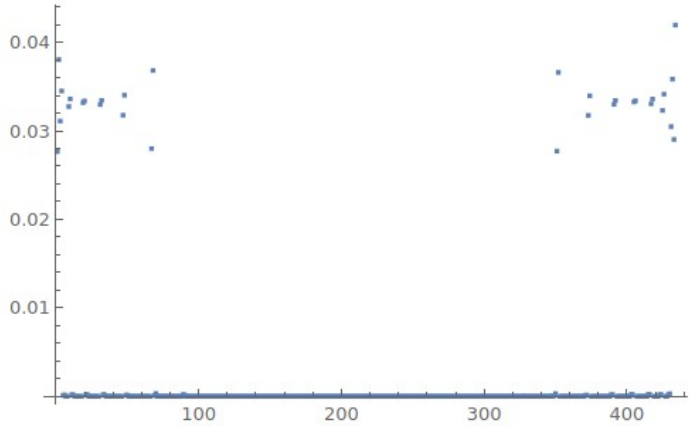
Two zero energy dislocation modes

m = -1 (M Phase)





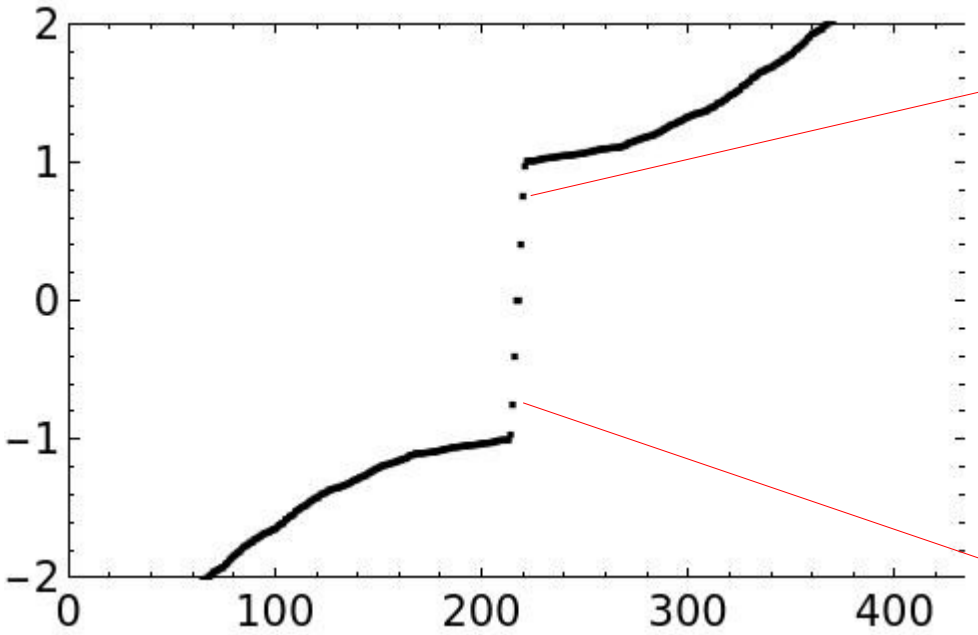
{Highest density at, {{433}}}

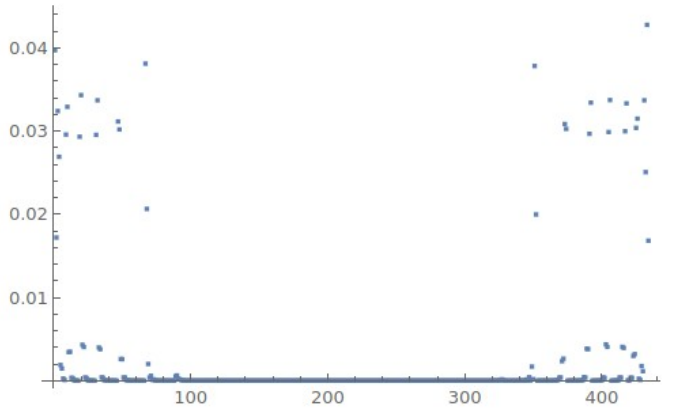


{Highest density at, {{434}}}

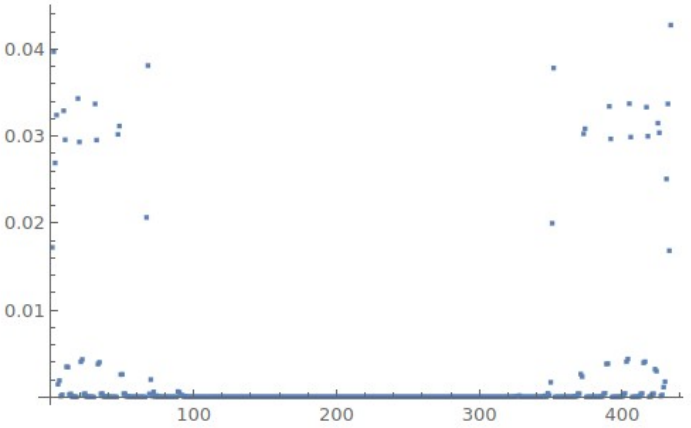
E= ±0.404
Edge like modes

m = -1 (M Phase)





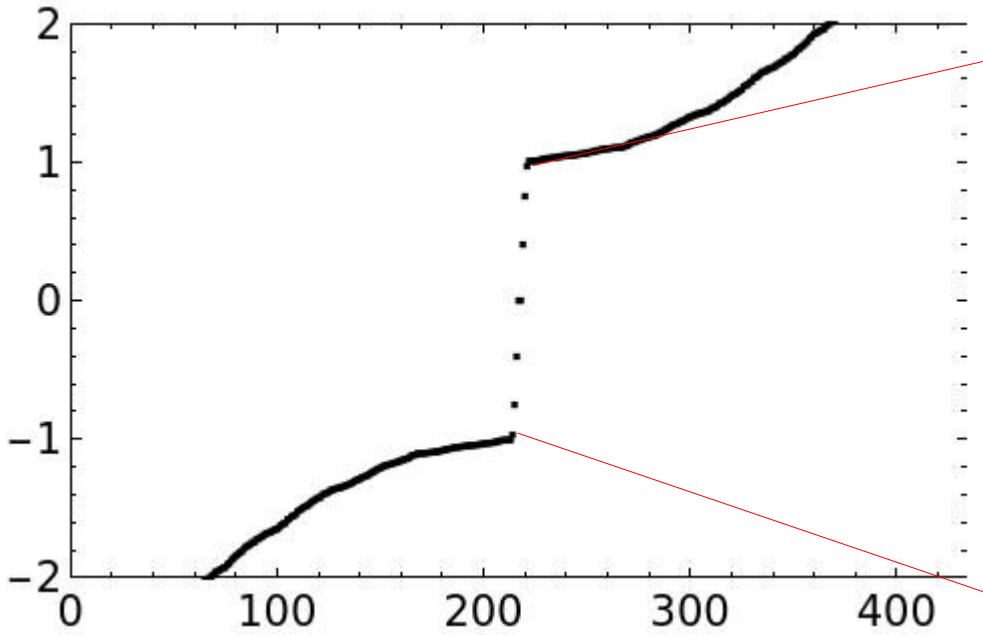
{Highest density at, {{433}}}



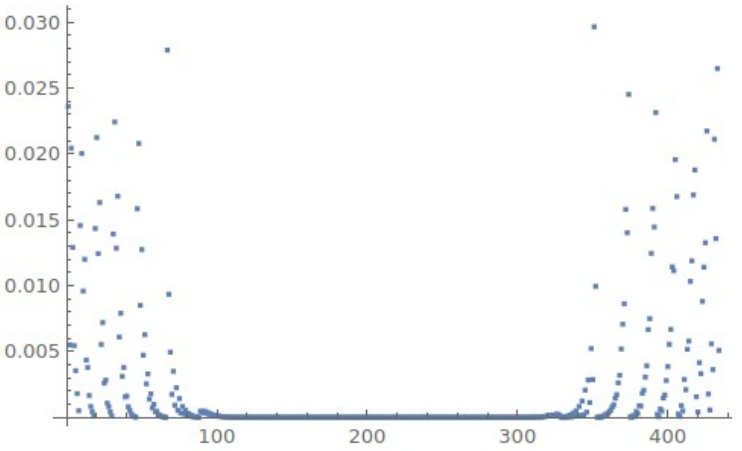
{Highest density at, {{434}}}

E= ±0.752
Edge like modes

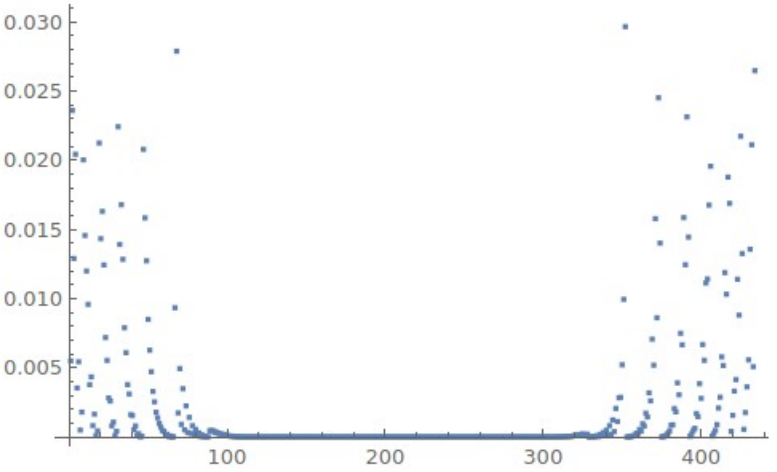
m = -1 (M Phase)



E= ±0.969
Edge like modes

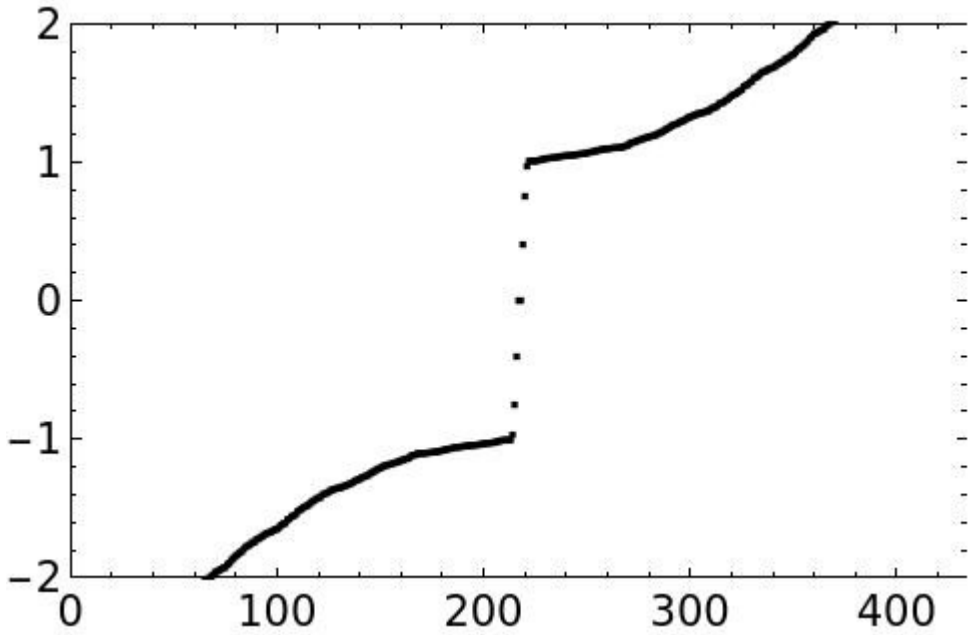


{Highest density at, {{351}}}



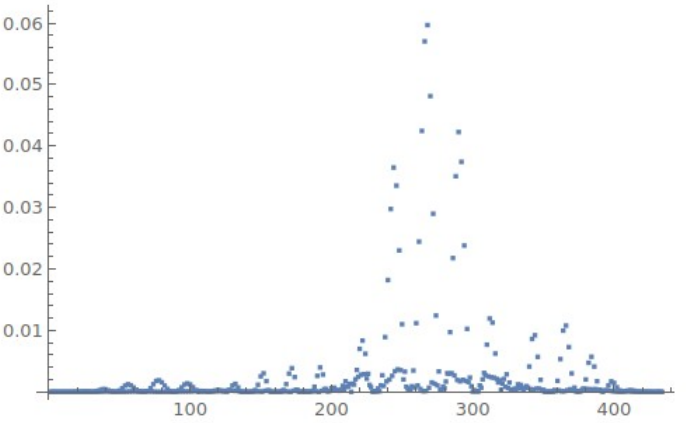
{Highest density at, {{352}}}

m = -1 (M Phase)

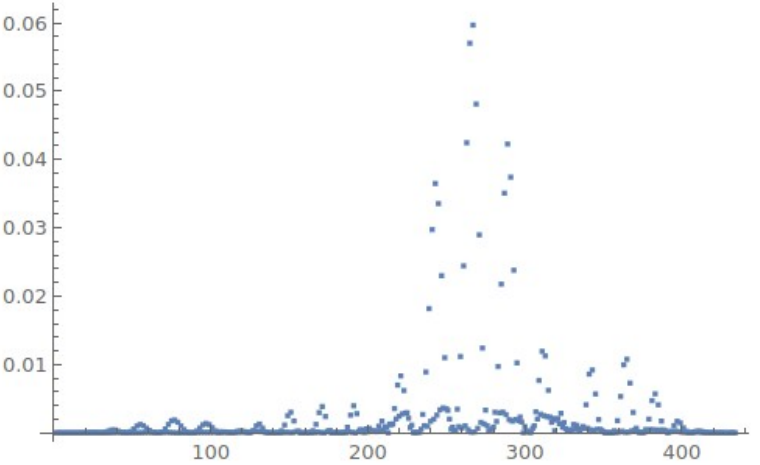


E= ±1.007

All other modes reside in the bulk

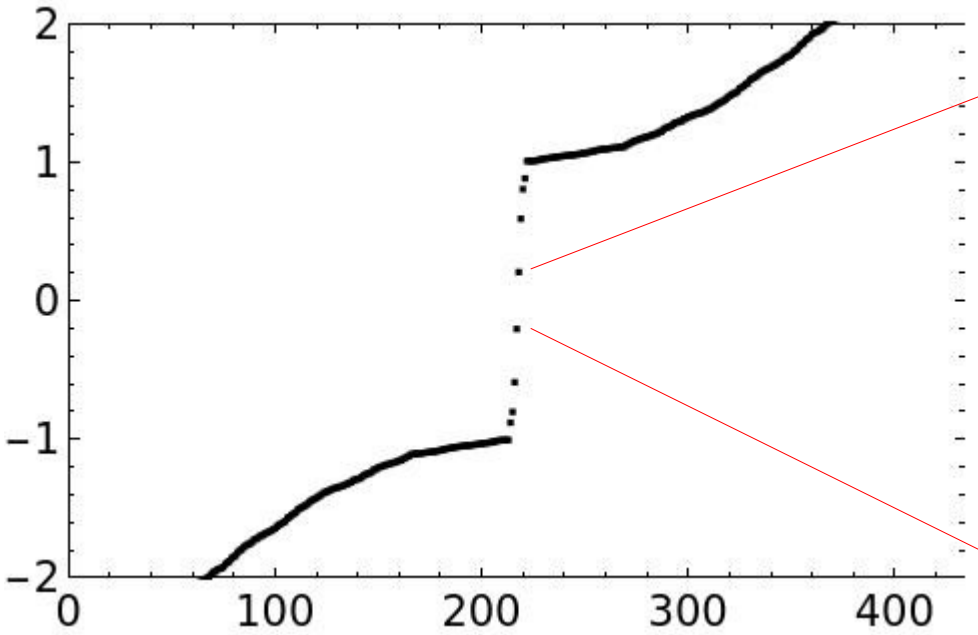


{Highest density at, {{268}}}

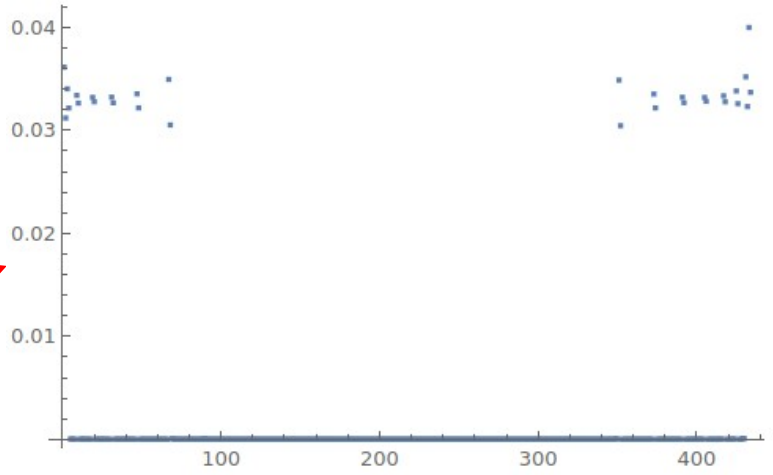


{Highest density at, {{267}}}

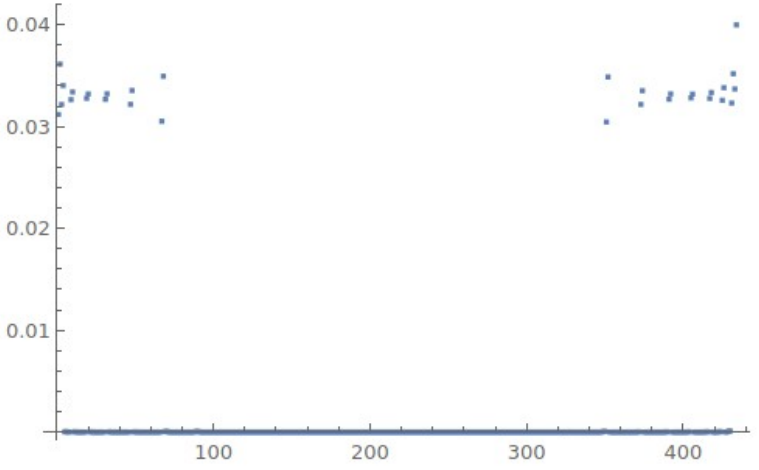
m = +1 (Γ Phase)



E=±0.205
Edge like modes

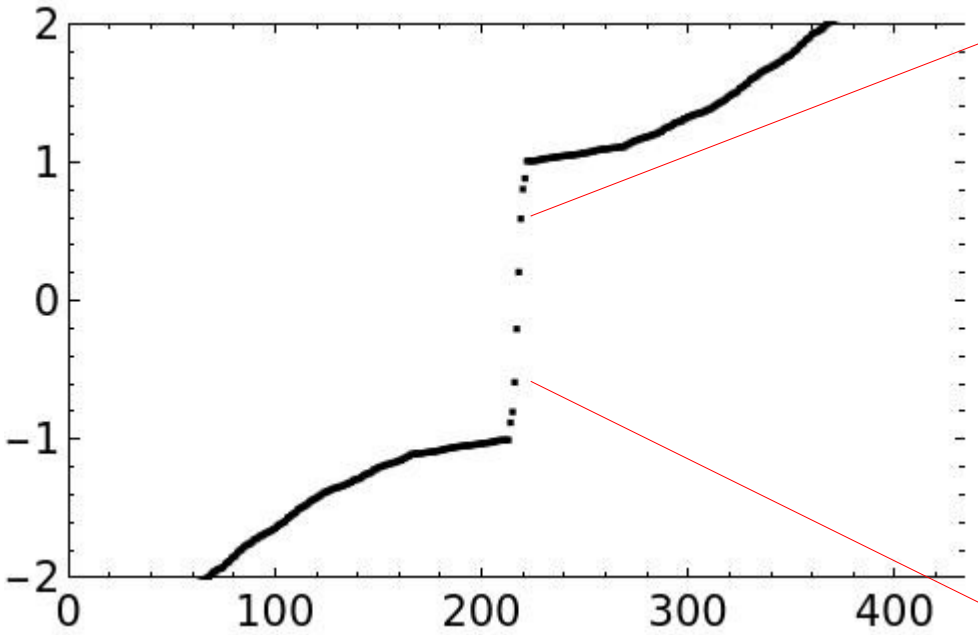


{Highest density at, {{433}}}

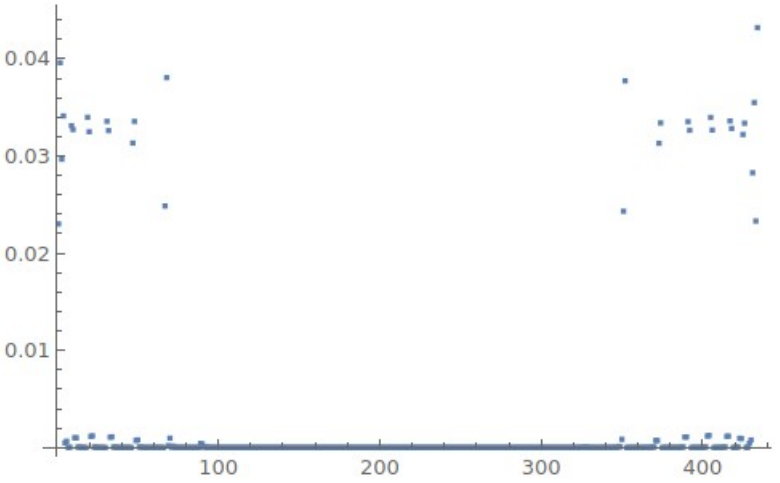


{Highest density at, {{434}}}

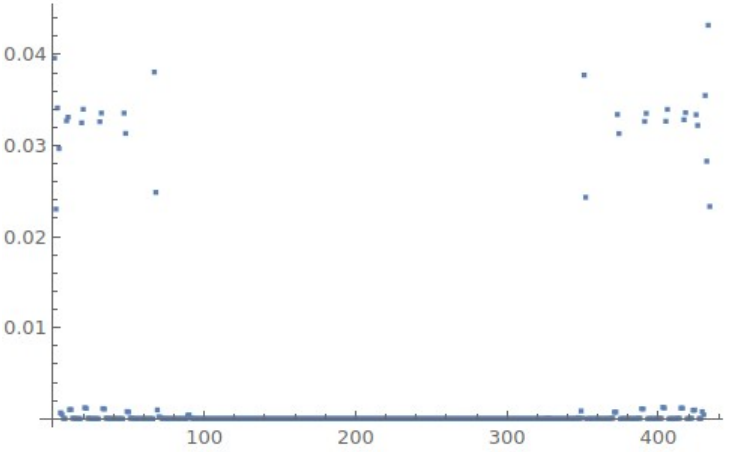
m = +1 (Γ Phase)



E=±0.590
Edge like modes

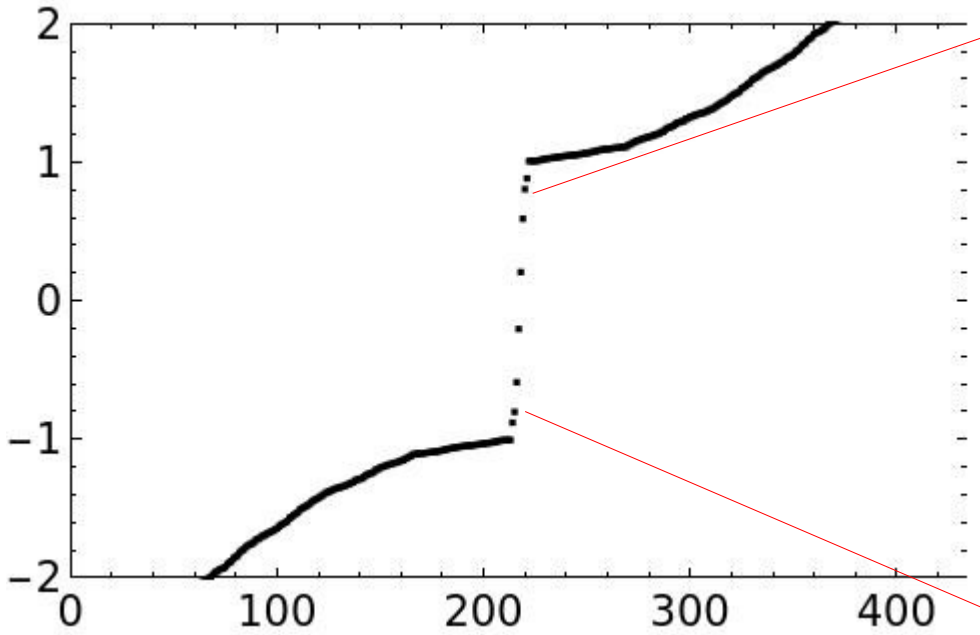


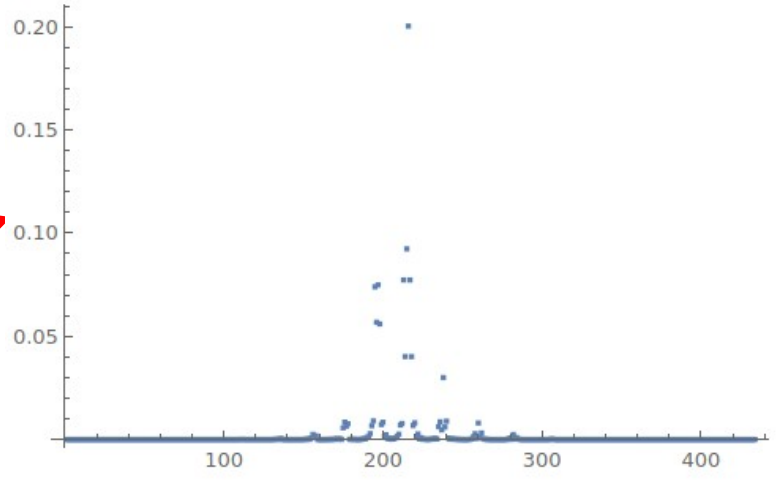
{Highest density at, {{434}}}



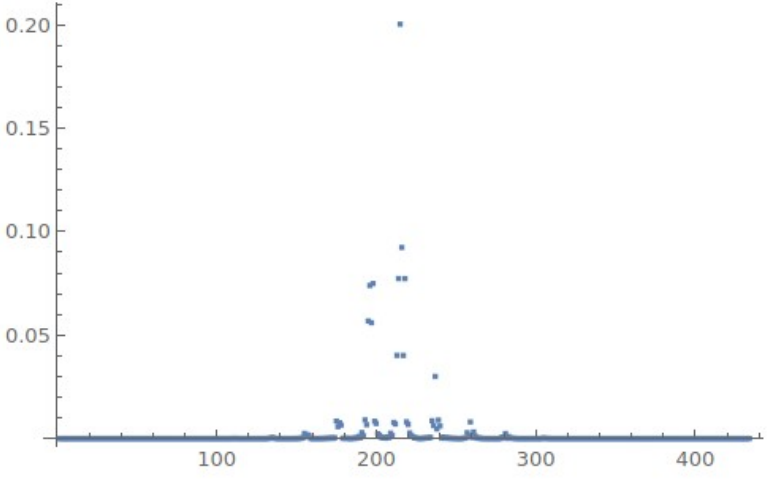
{Highest density at, {{433}}}

m = +1 (Γ Phase)





{Highest density at, {{216}}}

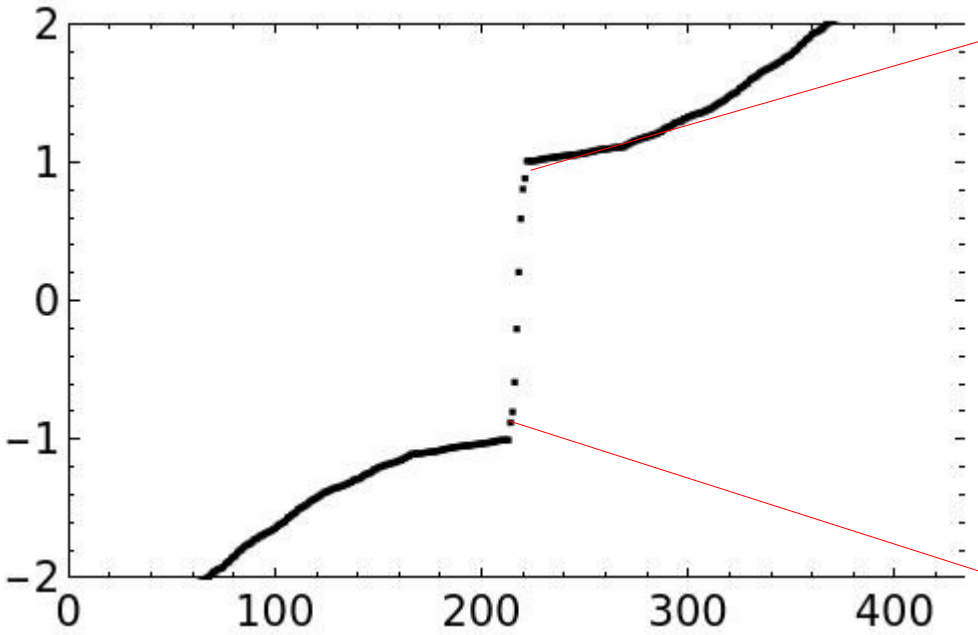


{Highest density at, {{215}}}

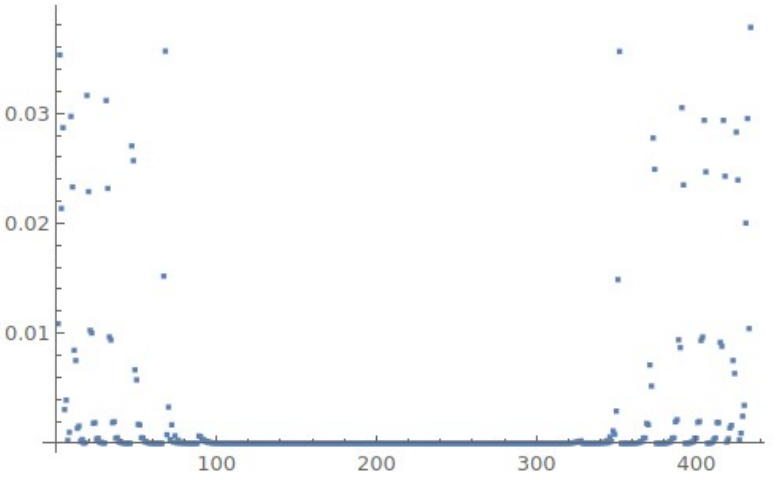
E=±0.804

Dislocation modes

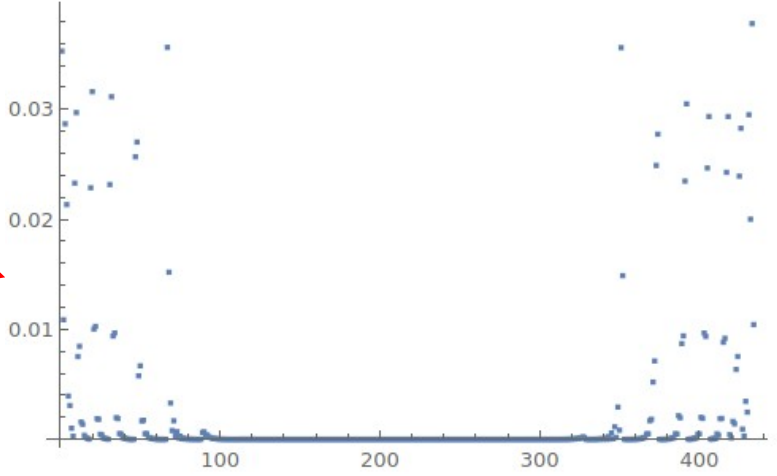
m = +1 (Γ Phase)



E=±0.881
Edge like modes

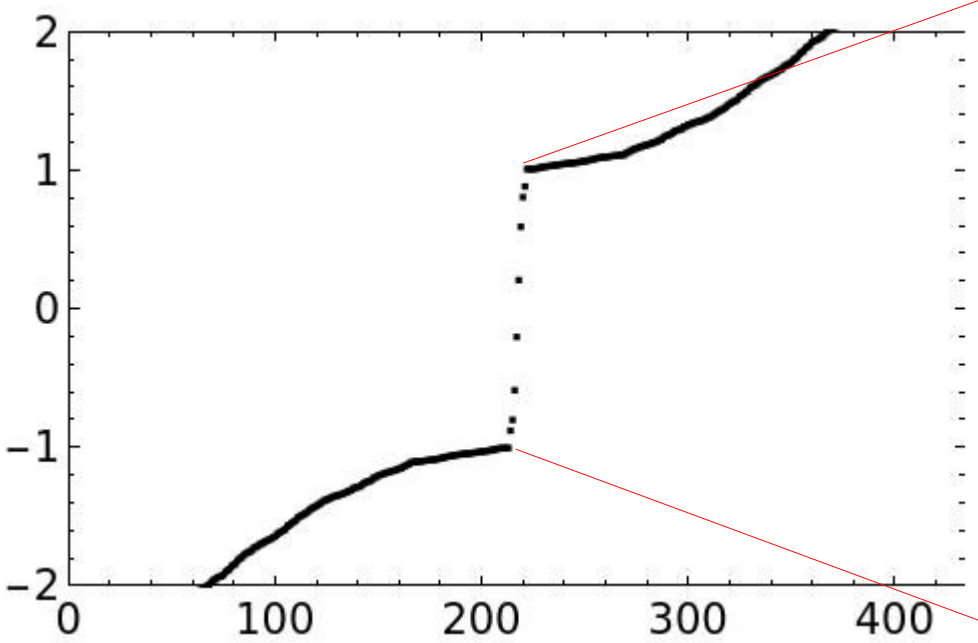


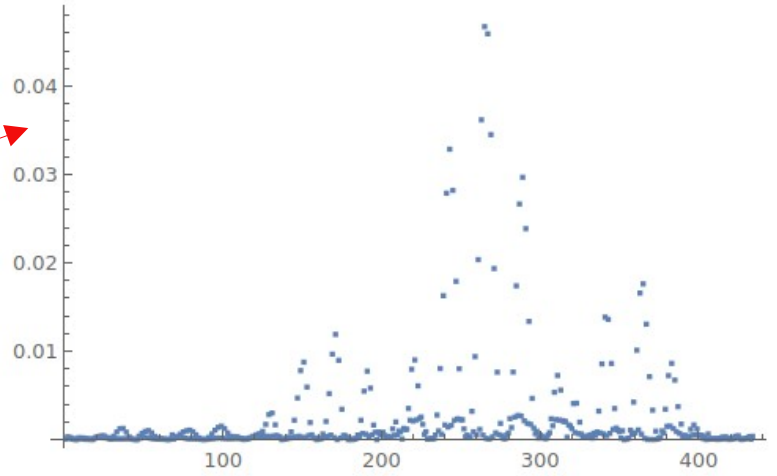
{Highest density at, {{434}}}



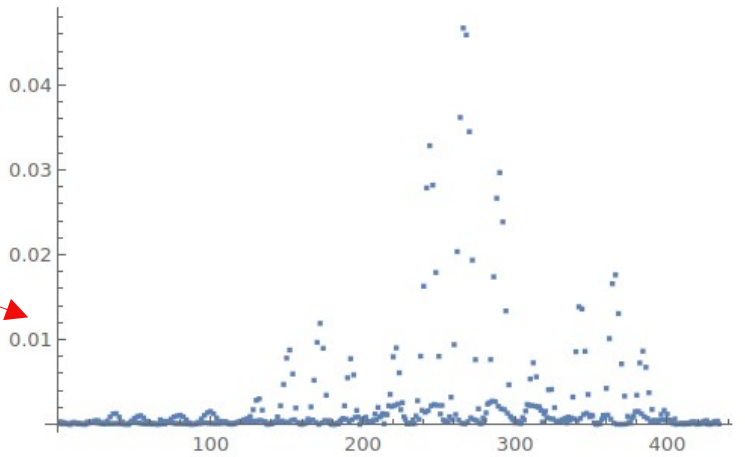
{Highest density at, {{433}}}

m = +1 (Γ Phase)





{Highest density at, {{265}}}



{Highest density at, {{266}}}

E=±1.007
The rest are bulk modes