**05/05/2020**

**Tasks to do**

1. Check the signs when the transverse field is zero.
2. Check if the elements of the G matrix changes over time
3. Poincare section choromography image better resultion: try to find out why there is a sharp minimum in Fourier transform in AR’s code from this Poincare chormographic plot. To get it what he is doing here is- we already know why ethere is minimum in Two level system (using rotating approximation process). Now he has to do is -
   * 1. fine tune the frequncy using the bisection or other root finding routine
     2. Floquet theory.
     3. Glok kitaev equation: try periodically driven field
4. Mean field condition focus on
5. Read Floque theory

**Short notes:**

When we are away from the freezing point, we are entering into chaotic region. So when it is in chaotic region it is basically out of the choromographic plot, and when it is at freezing point, it is regular region.

Clog theory: Chormo

**What i have to do:**

1. At freezing point chekc the correlations are very very small, then run BBGKY code for \beta = 0.001 and 0 and .8 or .9 <1, get \sigma x or \sigma z and then do a fourier transform . Then find the minimum point as like AR did in his code if the minimum is at same point or not. Now if the minimum vanises at beta near about 1, then we can say the freezing is topologically protected.

2. High sample rate and run time steps is very high.