

Neutron Star Inner Crust?

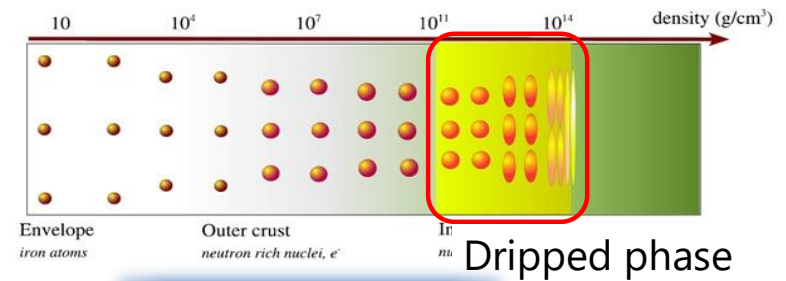
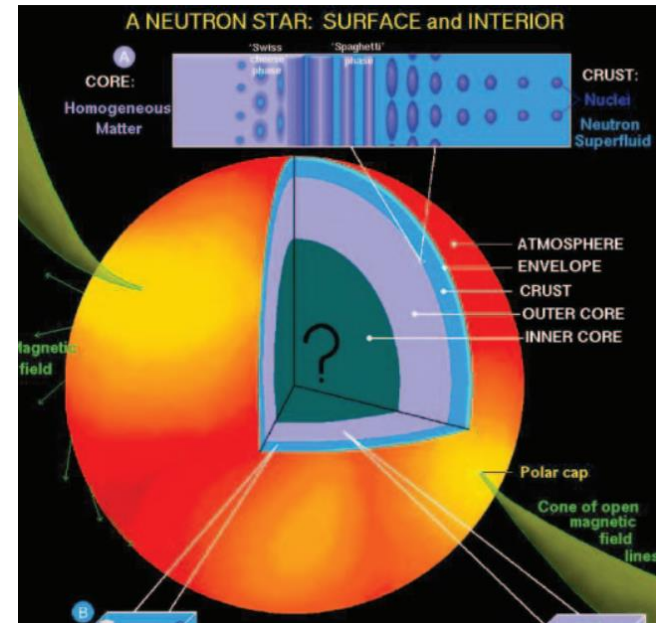
- ➔ Infinite Systems of nuclei
- ➔ Dripped neutrons co-exist
 - Band structure appears?
- ➔ Nuclear Dynamics changes?
 - (anti-)entrainment effect
 - Neutron star glitches
- ➔ Relate crucial nuclear features
 - r-process
 - Equation of State

HFB Equation

$$\begin{pmatrix} \hat{h}_q - \lambda & \Delta \\ \Delta^* & -\hat{h}_q^* + \lambda \end{pmatrix} \begin{pmatrix} u_\mu^{(q)} \\ v_\mu^{(q)} \end{pmatrix} = E_\mu^{(q)} \begin{pmatrix} u_\mu^{(q)} \\ v_\mu^{(q)} \end{pmatrix}$$

Band Theory

$$\psi_{\mu\mathbf{k}}(\mathbf{r}) = e^{i\mathbf{k}\cdot\mathbf{r}} \tilde{\psi}_{\mu\mathbf{k}}(\mathbf{r})$$



Band structure



Band structure?