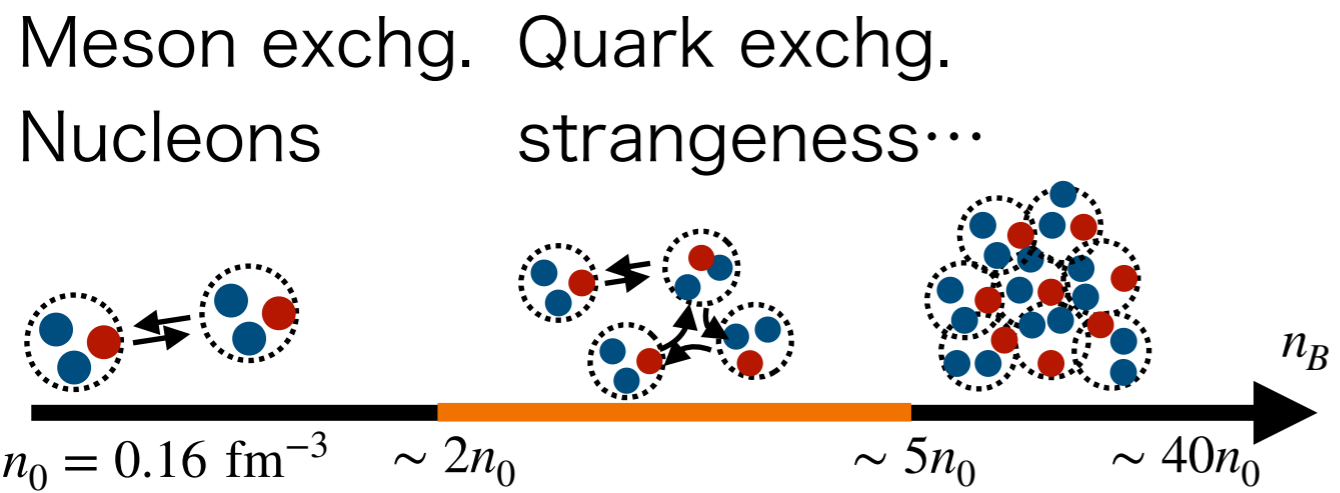
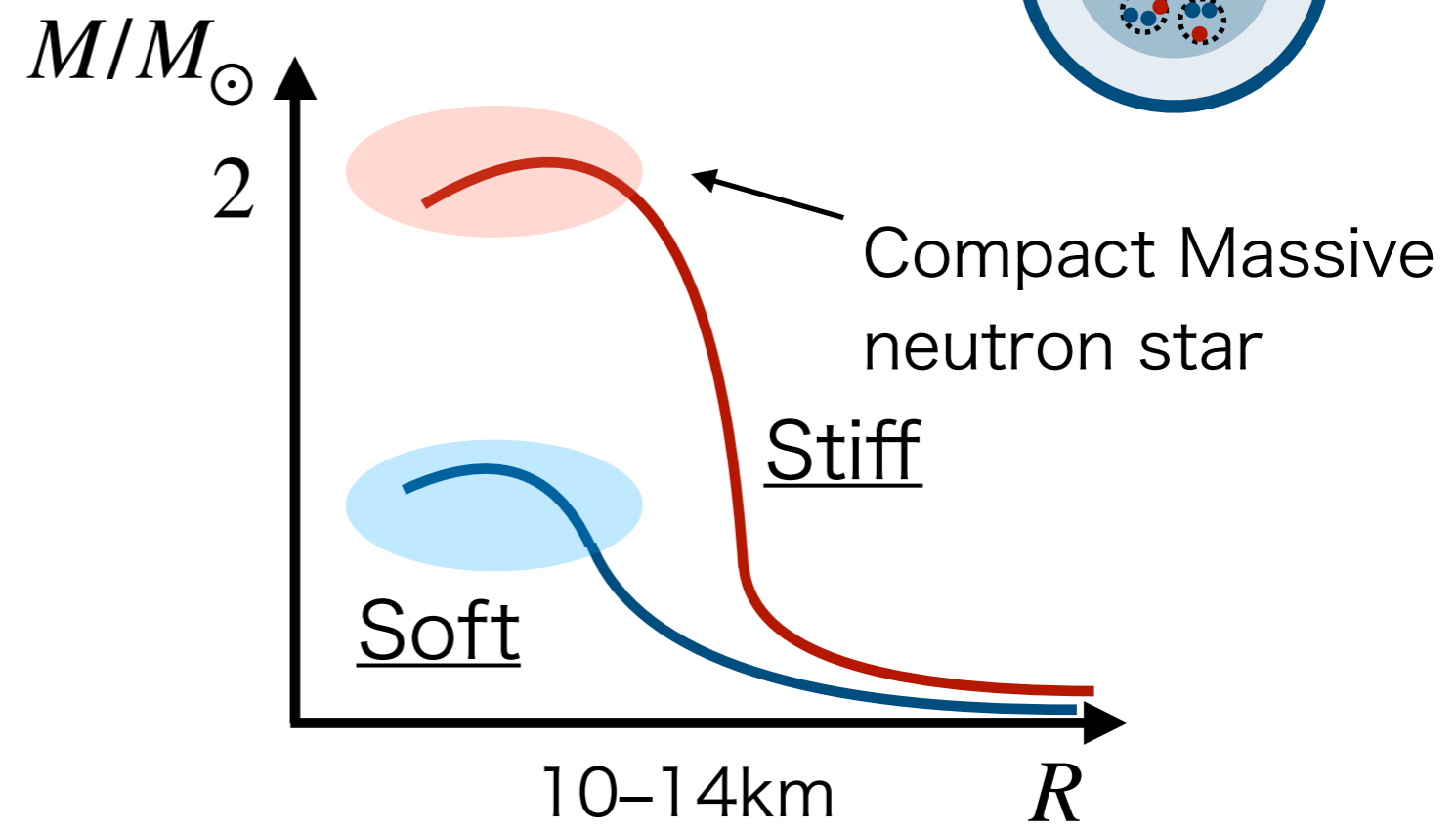
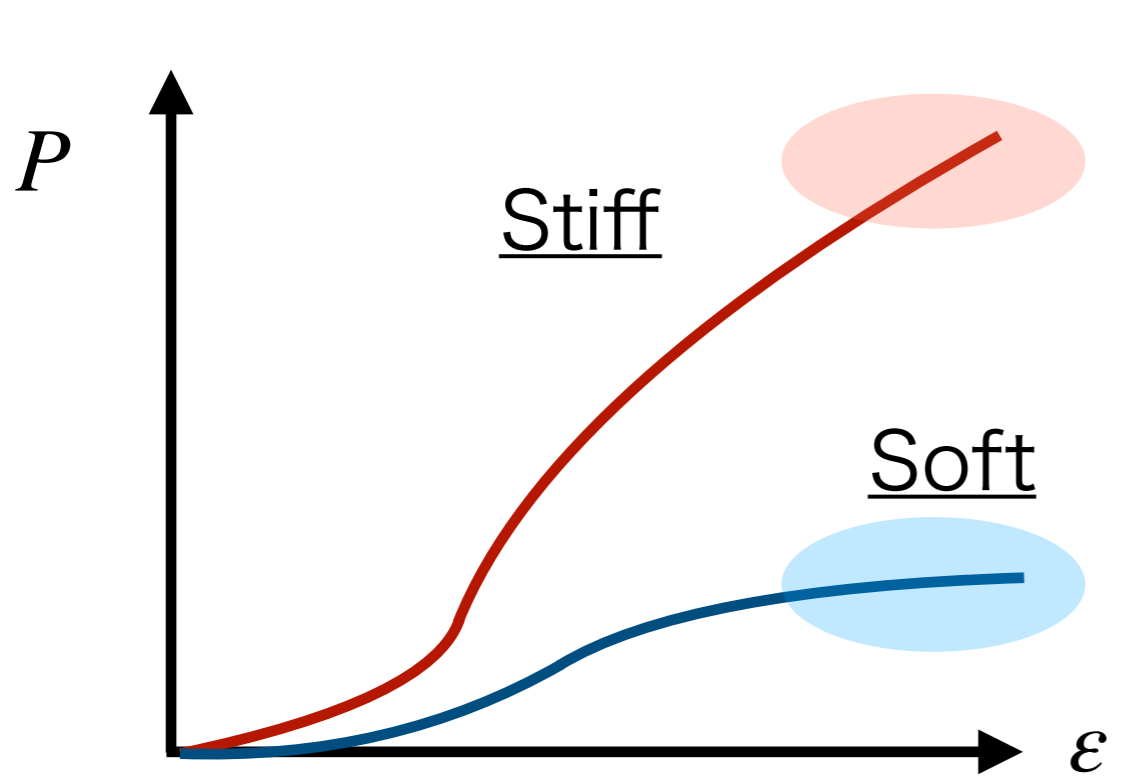
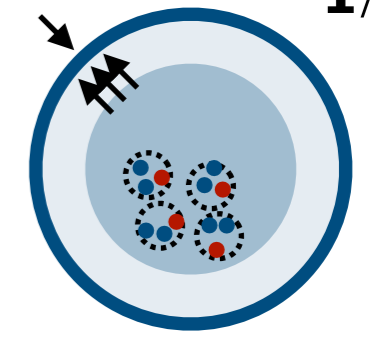


Neutron stars and EoS



NS meas.

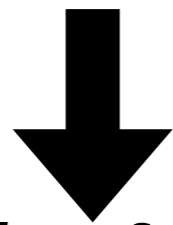
We want EoS reproducing the macroscopic observables, while possible neutron star mass can be reduced by hyperons.

Hyperon puzzle

How to avoid hyperon puzzle? ^{2/3}

Introducing the substructure to baryons

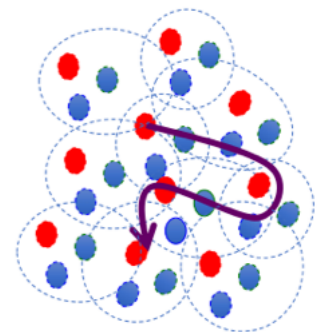
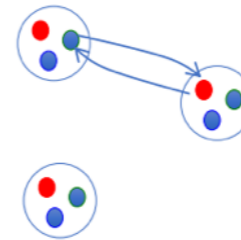
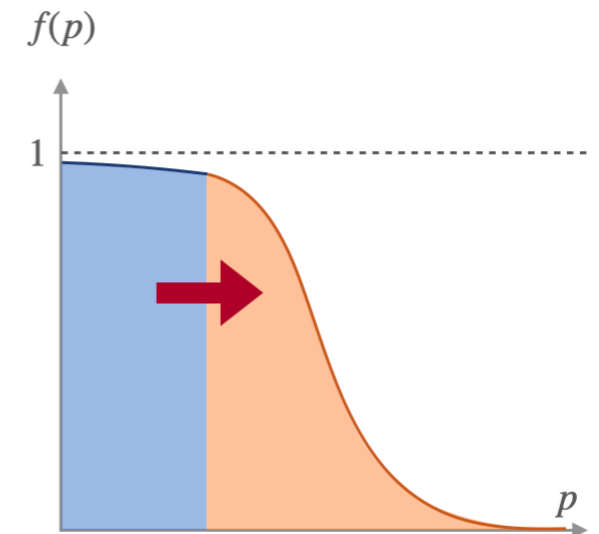
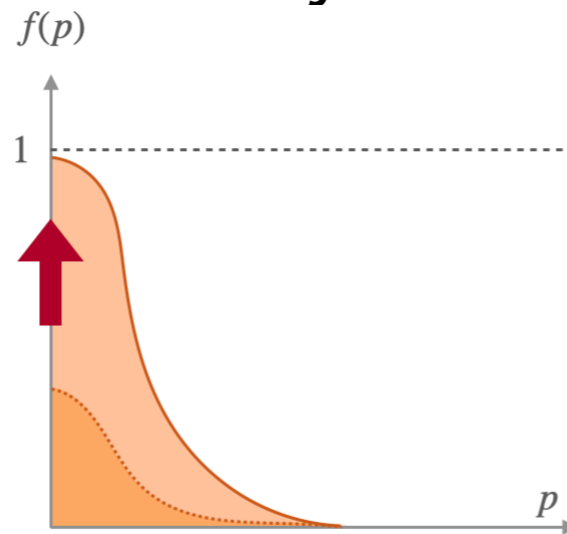
Quark saturation occur as it goes to the high density regime.



Light quarks form Fermi sea

Preoccupied light quarks disflavor to form Hyperons (uds) due to the pauli blocking?

The concept of the **statistical repulsion** is examined with the simple model in **two-color QCD** (QC_2D).

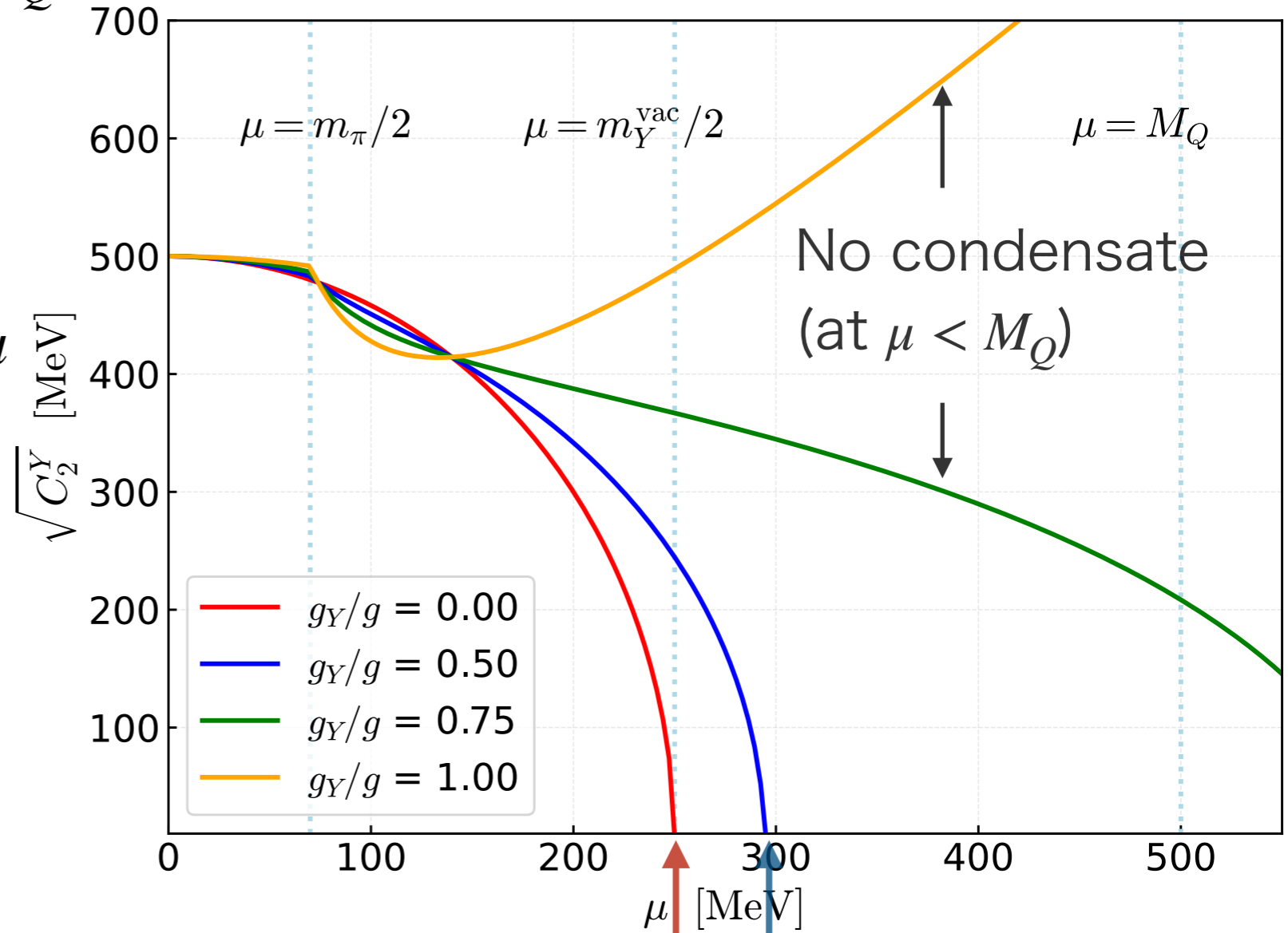


Hyperon coefficient $(C_2^Y)_R$

For fixed masses $(m_Y^{\text{vac}}, M_Q) = 500 \text{ MeV}$

$$V_{\text{MF}}^Y = \frac{(C_2^Y)_R}{2g_Y^2} \Delta_{Y_i}^2 + \dots$$

The onset appear at high μ as g_y/g becomes larger.
 → More chance to see **quark substructure with fermi sea.**



Onset without quark effects

Onset with quark effects

