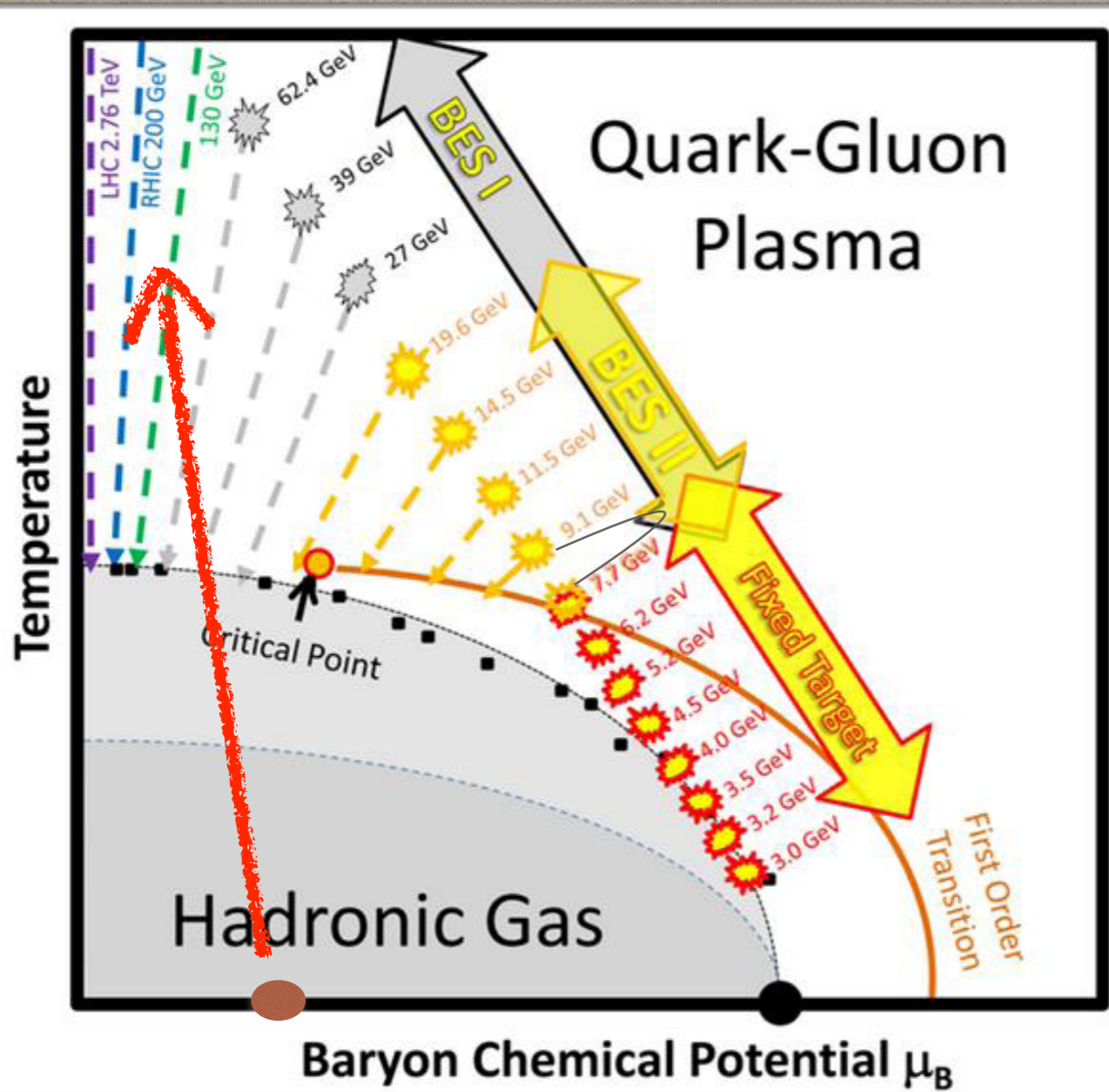


# HEAVY ION PHYSICS

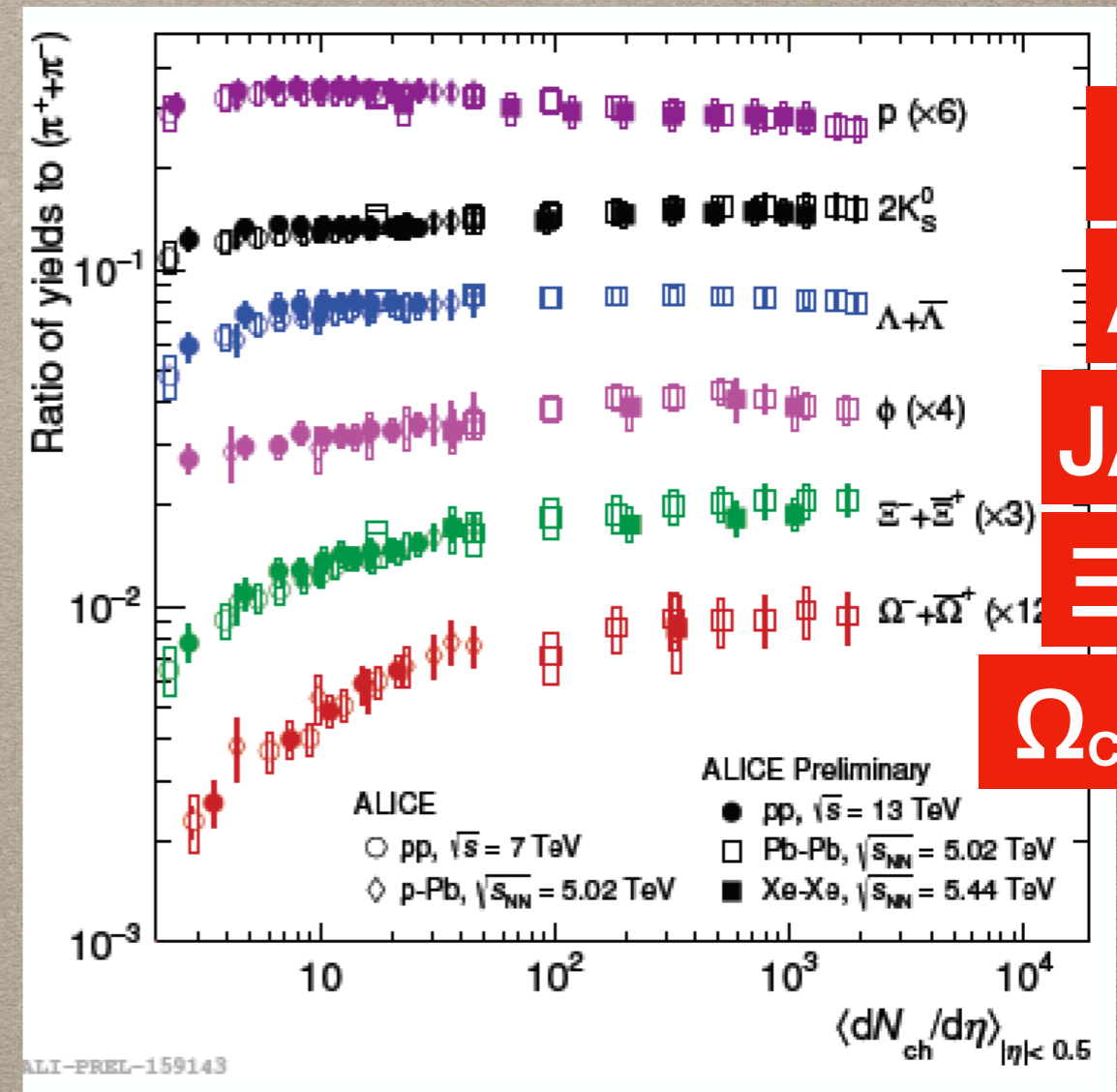
## SUMMARY & OUTCOME

IN-KWON YOO (PUSAN NAT'L UNIVERSITY)

# EXPLORING QCD PHASE III (RUN3)



Hot matter study



D

$\Lambda_c$

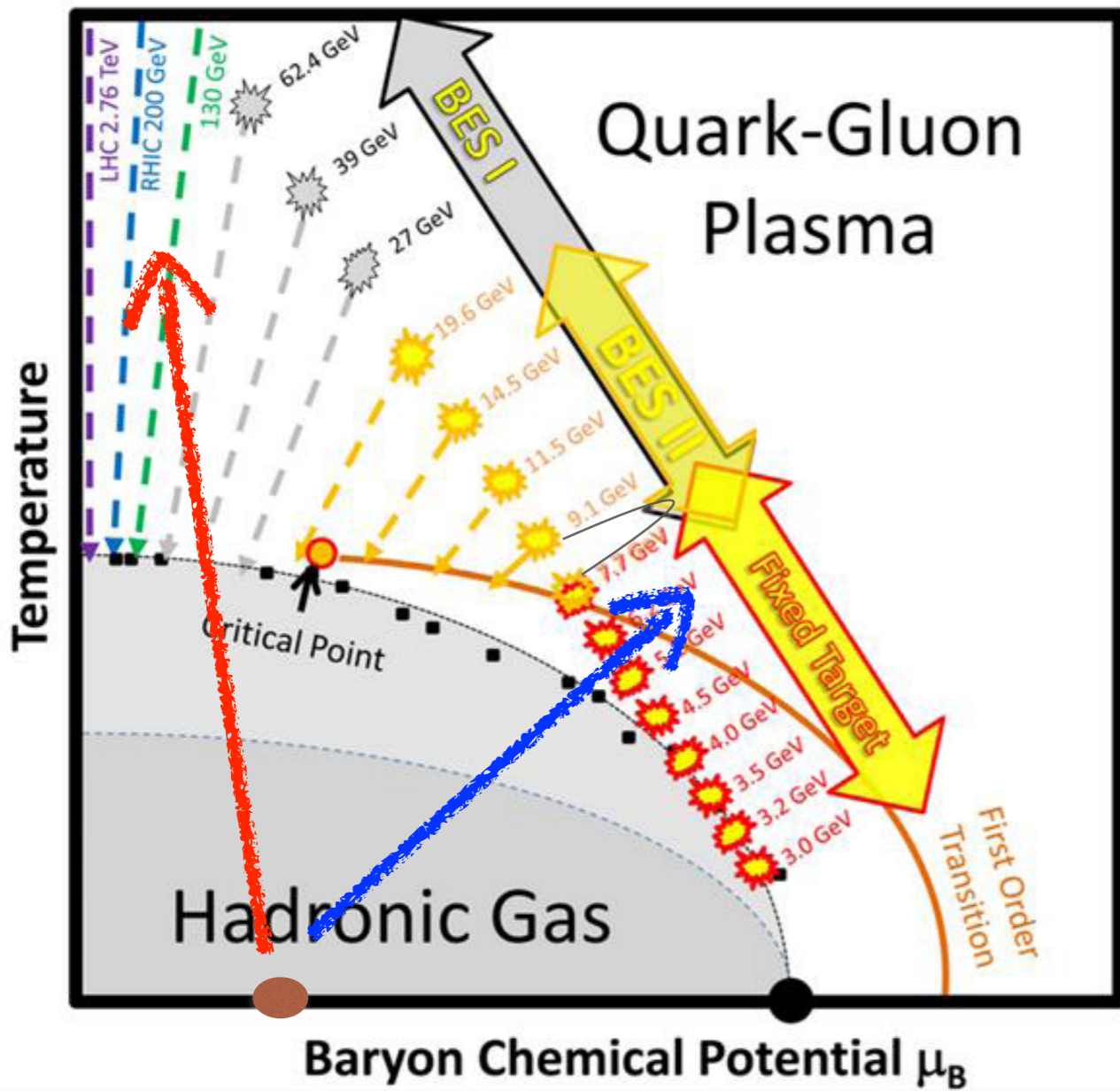
J/ψ

$\Xi$

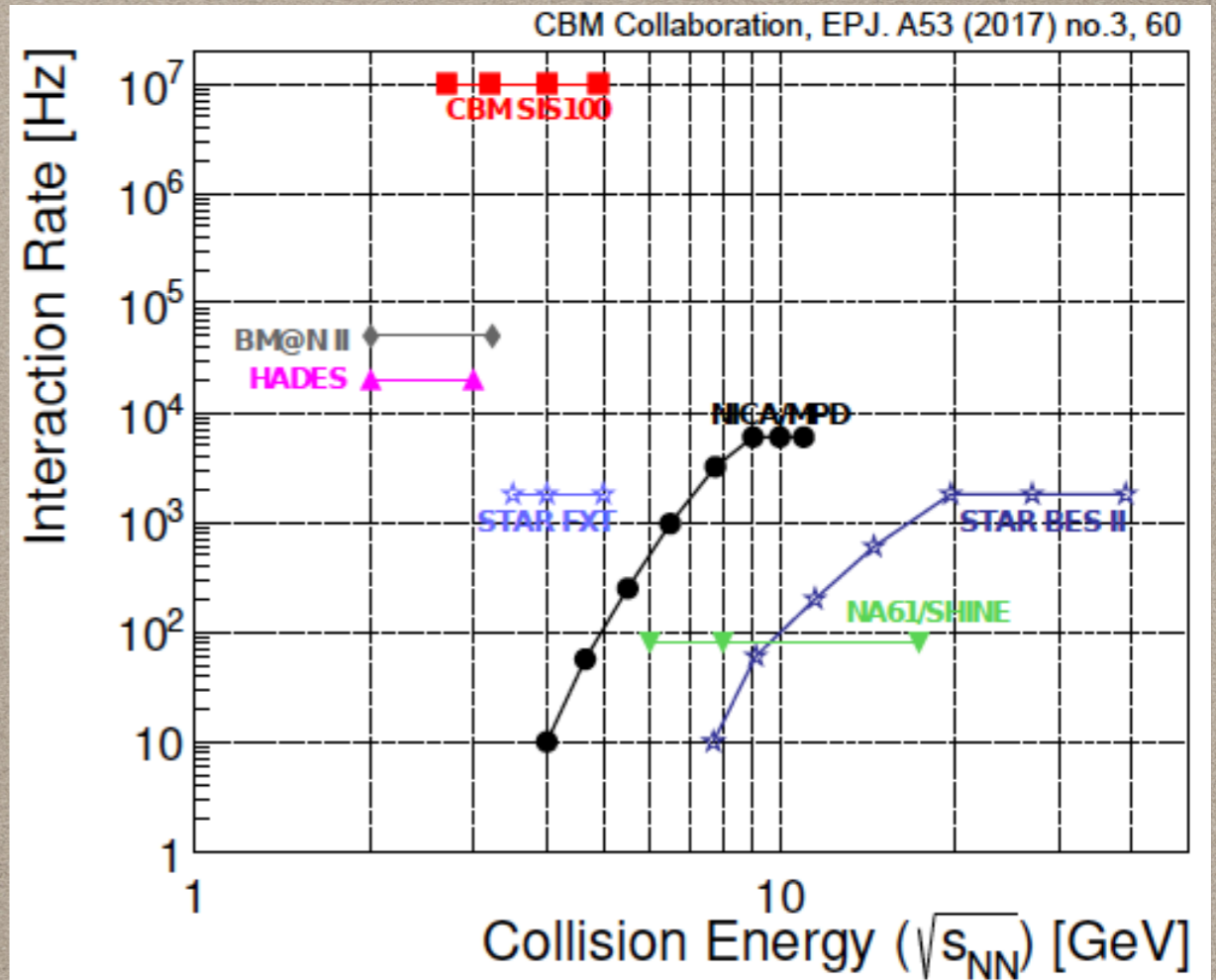
$\Omega_{ccc}$

LHC RUN3:  $2.4 \times 10^{27}/\text{cm}^2\text{s} \sim 10 \text{ nb}^{-1}$  (PbPb)  
 ALICE Upgrade is NOW ongoing (LS2)

# EXPLORING QCD PHASE V (FUTURE)



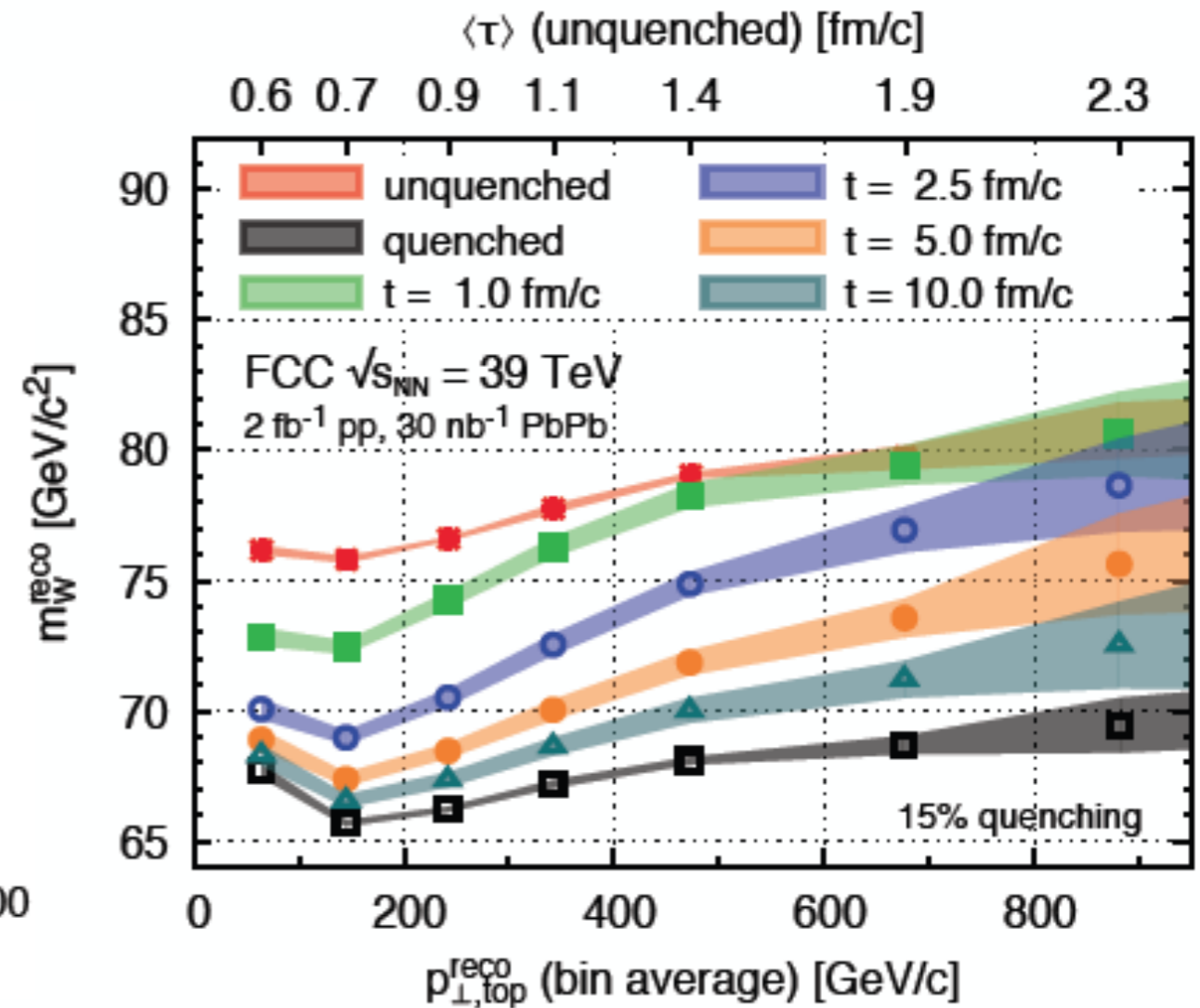
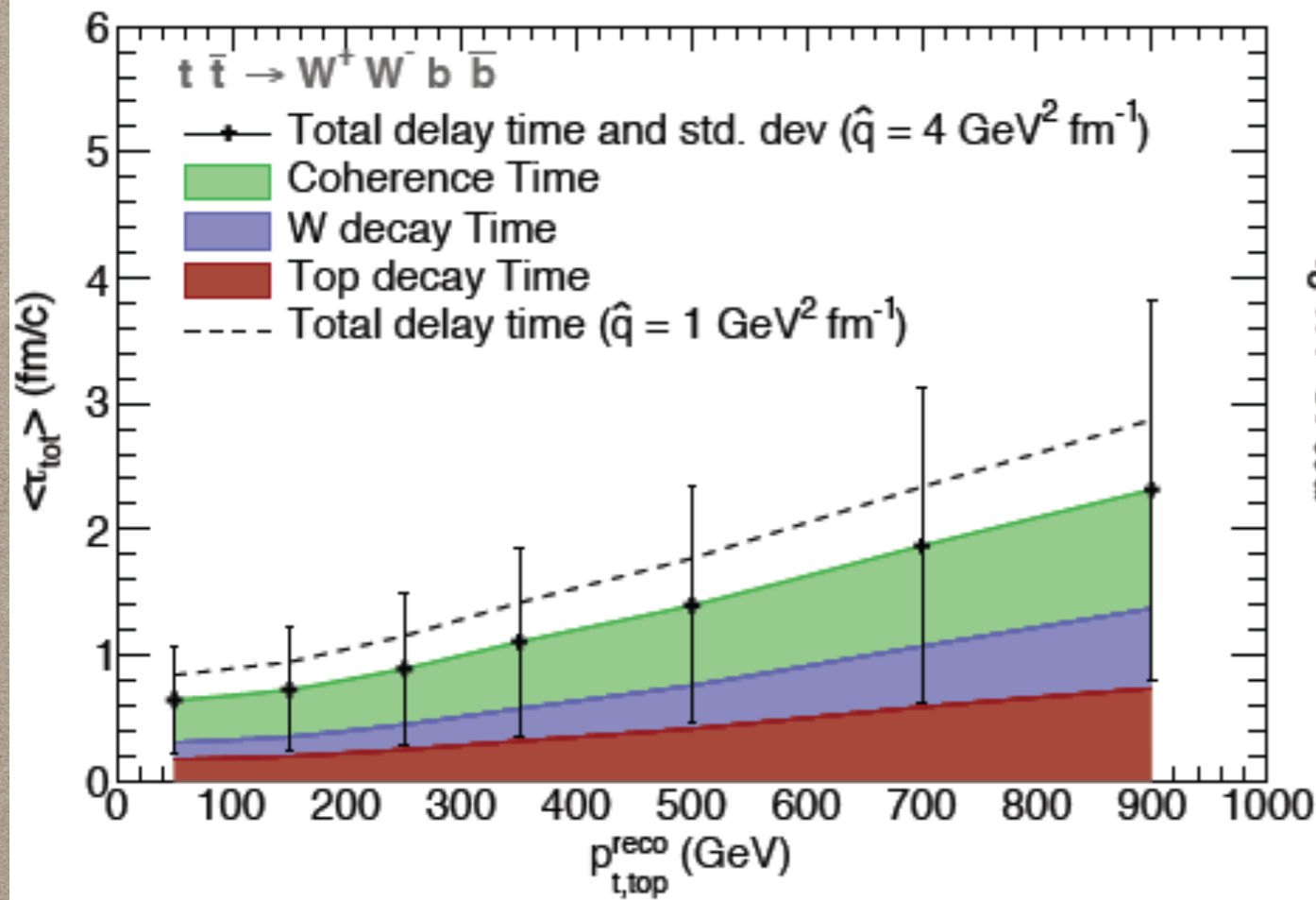
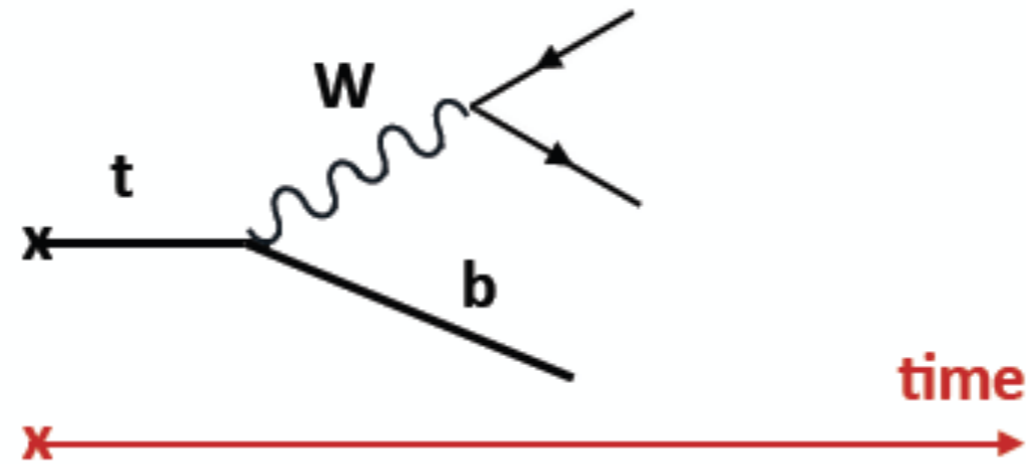
Critical Point Search  
(1st order phase transition)



critical region of  $\sqrt{s_{NN}} \sim 5 - 30$  GeV

# Boosted tops in HI as QGP probe

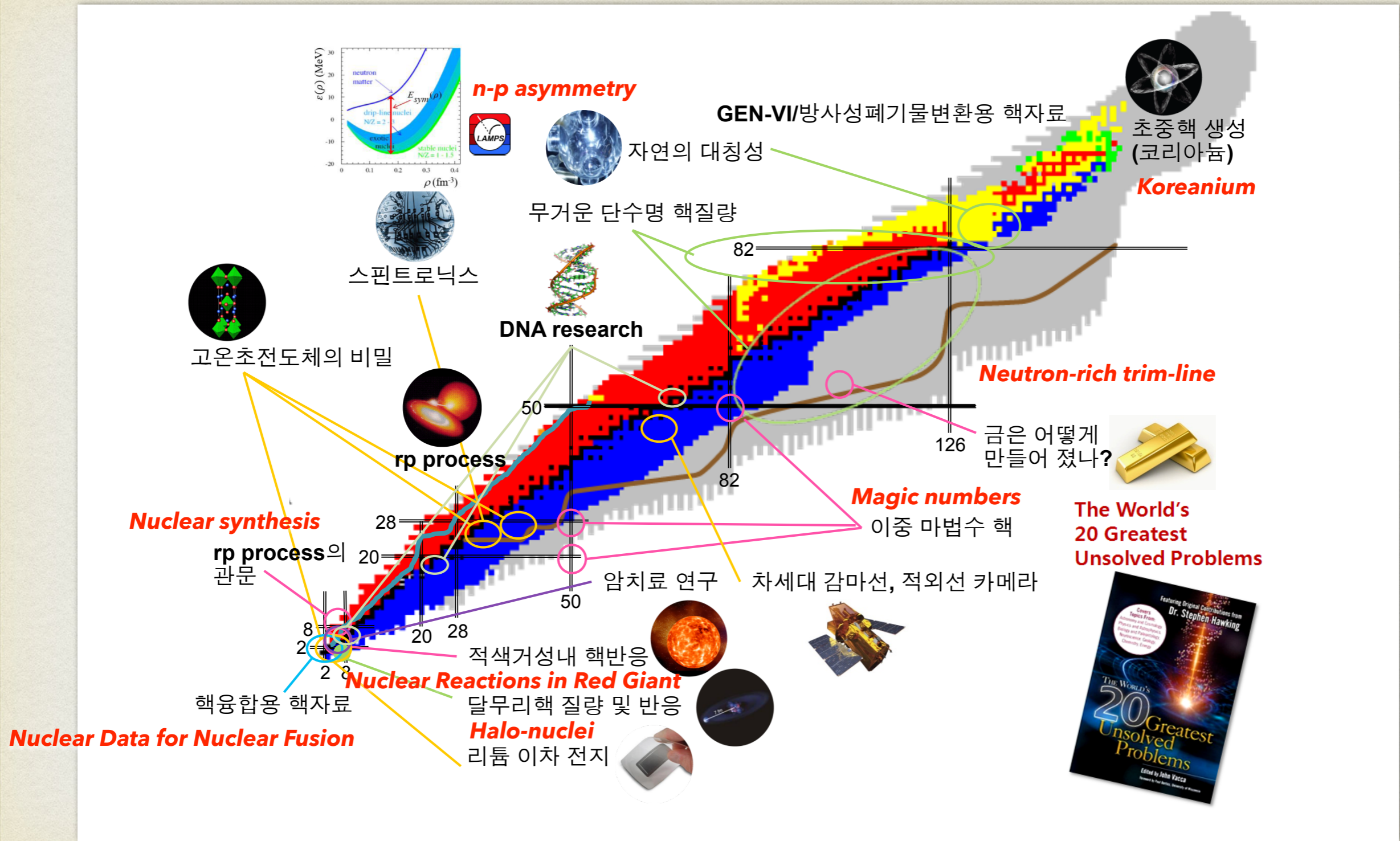
M. Mangano



# WHERE WE ARE

- KPS Nuclear Division ~ 100 incl. students
  - LENS (Low Energy Nuclear Science): RIKEN, ISOLDE ... RAON
  - HAPHY (Hadron Physics): JLab, JPARC ... RAON
  - HIM (Heavy Ion Meeting): CERN (ALICE, CMS), BNL (STAR, PHENIX,... sPHENIX), FAIR (CBM) ... RAON
  - Application, Neutron etc.
- Accelerators
  - Pohang Light Source (PLS)
  - Korea Multi-purpose Accelerator Complex (Proton@100MeV)
  - RAON

# Rare Isotope Science Project



# HIGH ENERGY NAT'L LAB. (BLL)

- The **0th step** for possible Korean contributions to the world-community:  
Nat'l lab based on RAON
- **Particle - Nuclear - Astro physics + (seed) Accelerator**
- Centering Humanpower, Budgets
- Centering Infrastructure (shops, computing etc.)
- International Network Center for fundamental science
- **Issue:**
  - **Accelerator Operation (Governance) Service for users?**
  - **Separation of Applied (Technology) and Fundamental one (Science)**
  - **Any form of endorsement (workshop outcome) would be helpful**