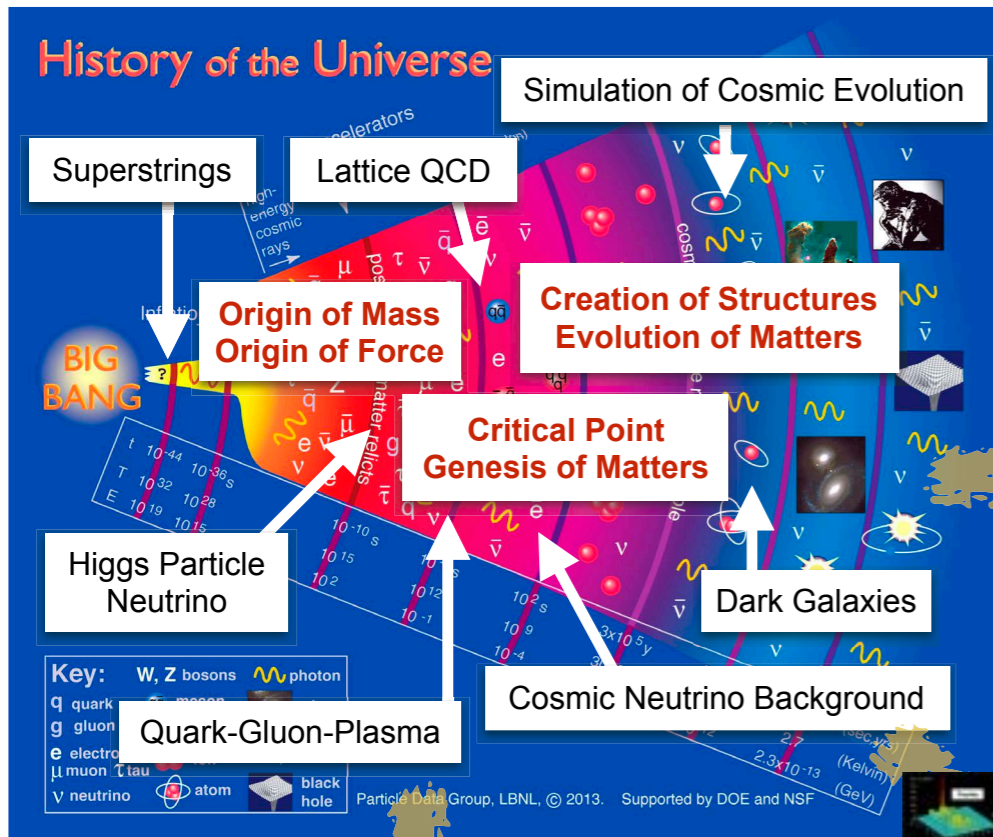


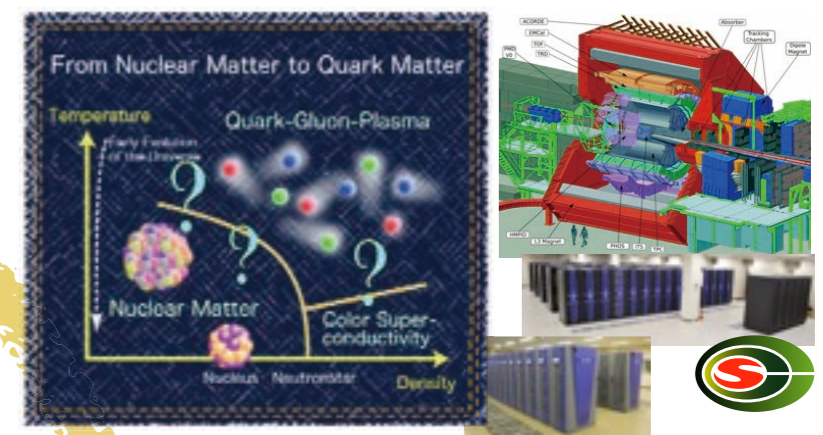
# Research Core of the History of the Universe



Mission: Coordinate the studies in the elementary particles, quark nuclear matters, and the astrophysics to construct an integrated view of the History of the Universe.

Coordinator: **Prof. Shinhong Kim**

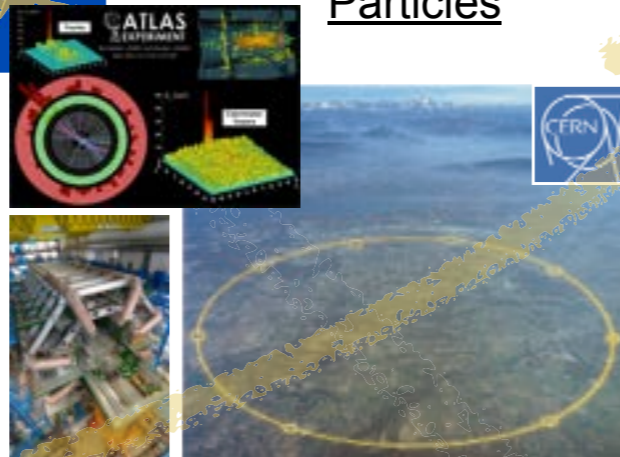
## Division of Quark Nuclear Matters



Principal Investigator: **Asso.Prof. Shinichi Esumi**

Clarification of the nature of the high-temperature quark-gluon-plasma state several  $\mu$  seconds after the Big Bang as well as the high-density nuclear matter in the core of neutron stars. Identification of the critical point expected at intermediate temperature and density.

## Division of Elementary Particles

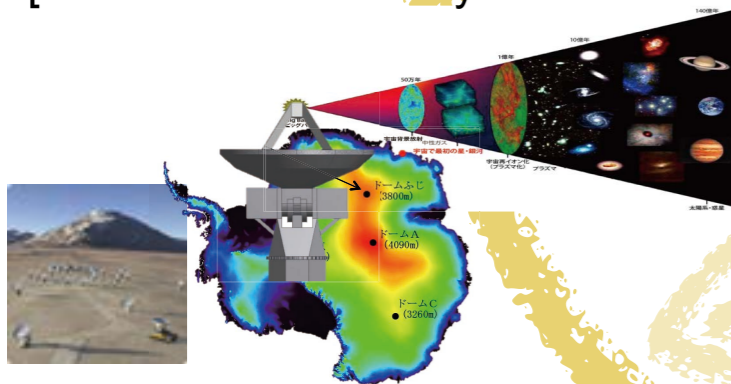


Principal Investigator: **Prof. Fumihiko Ukegawa**

Through experimental study of Higgs particle and neutrinos together with theoretical study of superstrings, understand the fundamental structure of particles and clarify the History of the Universe.

## Division of Antarctic Astronomy

[Antarctic Observatory of Astronomy]



Principal Investigator: **Prof. Naomasa Nakai**

Clarification of the formation and evolution of the first galaxies and the Universe through deep space observation by the Antarctic Telescope and other Observatories.

“Consortium of Antarctic Astronomy”

“Consortium of the History of the Universe”

Development of data analysis methods in collaboration with Lab. for Inverse Problems

**Illuminate the “Darkness”:**

**=> Dark Matter, Dark Energy, Dark Galaxies, ...**

**=> Genesis of matters, creation of structures, and their evolution.**