

# Opening Remark

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*4th open Hyper-K meeting  
January 27-28, 2014*

# Some backgrounds...

- New SCJ Master plan will be released in about a month → Let's assume that our project is selected as one of important large projects.
  - MEXT will work on making a roadmap 2014 in March-June (not announced).
  - Each projects will be ranked.
  - Hearing will be made in March or later. We should be ready for that.
- World-wide strategy discussions are being made in many places (in P5, ICFA v panel, conferences) and we need to justify Hyper-K by its physics cases, readiness, strategy etc.

[We are in turning point]

# Goals of this meeting

- Let's update and strength Hyper-K physics potentials
- Updates on detector design, cost estimation, and timeline
- Prospect of foreign participations and contributions

Prepare for near future discussions w/  
MEXT, funding agencies in each countries,  
community members etc.

# I, Hyper-K physics cases

- JPARC $\nu$ +Atm $\nu$  study
  - Realistic sensitivities of  $CP\delta$ , MH determination, and other parameters.
  - requirement for near detectors, their design
- Nucleon Decays
  - Further BG reduction and error reduction to maximize discovery potentials (e.g.  $14 \pm 6(\text{syst.})$  BG events for  $p \rightarrow e^+ \pi^0$  in HK 10 yrs)
- Astrophysics
  - SN burst, relic SN  $\nu$ , WIMPs, and others
  - need realistic sensitivities, importance of physics

## 2, Hyper-K design, cost, timeline

- Updates on excavation, tank construction, photo-sensors, water system, DAQ, calibration...
- Strategy of the detector configuration study w/ HK simulation, and then physics potential study
- near detector design, beam upgrade plan → Lol to be submitted to J-PARC PAC

Please report latest cost estimation of your components and available reference (documents) in this meeting. Number to be shown to the MEXT should reflect your inputs.

# 3, Foreign participations & contributions

HK talk (Shiozawa)@open P5 meeting

## Possible foreign contributions

A conceptual design exists.

We are open to ideas toward a full design.

- Cavity and structure (500M USD)
  - contribution of innovative design and materials welcome  
e.g. LBNE WC liner & PMT mounting
- Photosensors (200M USD)
  - open to manufacturers other than Hamamatsu.  
Competition helps reduce cost.
  - Innovative ideas like MPC PMT welcome.
- Electronics, Calibration
  - This is an area where foreign contributions are expected.
- Other systems of modest scope
  - outer detector
  - water system
  - near detector
- Accelerator (J-PARC) and beamline intensity upgrade.
  - history of accelerator lab collaboration.

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