

Why detector R&D ?

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- Seem obvious but Looking back for 10 years(in China), the answer was no so obvious
 - We don't know why to do
 - We don't know what to do
 - We fear that efforts would be wasted
- Probably because of
 - limited resources
 - No future projects

- **In fact, after BES I**
 - Detector team disappeared
 - No detector works for almost 10 year
- **Consequence: very difficult at the beginning of BESIII (~2000): short of man power, technology capabilities, know-how, ...**
- **A lot of discussions during the construction: what to do after the BESIII ? (~2004)**
- **Made decision before knowing the boundary condition: detector R&D**
- **Established a joint lab on “Particle detection and electronics” with USTC (~2005) → Key Lab of CAS: ~ 0.3M\$/year(2009)
→ National key laboratory (2011): 5M\$ for lab improvement + ~1M\$/year**
- **In addition**
 - Funding situation improved since ~2005
 - More and more support from all parties

- A few guidelines we had:
 - Projects driven (BESIII, Daya Bay, LHAASO, ...)
 - No more than 30% for free surfing
 - Best in China, Possibility to be the best in the world
 - Taking into account the industrial capabilities in China
 - Satisfy nation's needs (CSNS, Synchrotron radiation, ...)
 - Try to expand beyond HEP (neutron, X-ray, applications, ...)

- With all the funding and our efforts, we are now in a good shape:
 - Although not so advanced everywhere, we are at a rising edge
- A positive feedback:
 - New projects benefit from detector R&D
 - Detector R&D results help to start new projects
 - CsI(Na) crystals for dark matter searches underground
 - CsI(Na) crystals 3D digital calorimeter for space exp.
- International collaboration: Results and resources of detector R&D can be shared → good to our community