

## Asian Calorimeter Activities and Plans

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Availability of Asian test-beam facilities is summarized. A short comment on a set of drift chambers is given to show an example of inter-regional cooperation in the test-beam studies. Preliminary test-beam plans of two Asian calorimeter R&D groups are presented.

### 1. ASIAN TEST-BEAM FACILITIES

In Table I test-beam facilities in Asia are listed. Some are currently available and the others are under consideration. For many years KEK PS [1] has played a very important role in Asia, because of its (relatively) high momentum and a variety of particle types. This facility will stop its operation in Spring 2006. Japanese high energy physicists are strongly pushing to construct a new test-beam facility in J-PARC [2]. However, this is not funded yet, and the operation of the facility will start in 2010 at the earliest. They also try to construct a test-beam facility at the KEK linac. This failed to get funded.

This means that we will have no test-beam facilities with momentum greater than 1.2 GeV in Asia during the period from 2006 to 2010. But, of course, we can go to DESY, CERN, FNAL, or any other place, where test-beams are available.

### 2. TSUKUBA DRIFT CHAMBERS

A set of drift chambers, manufactured by a group of Tsukuba University, has been used to precisely measure the trajectory of incident particles for several test-beam experiments [3–5] at KEK, FNAL, and DESY. The chambers are now located at the ST21 beam-line at DESY for the test of CALICE Silicon-Tungsten electromagnetic calorimeter. The initial setup of the chambers was made by a Japanese team in February 2005 and the operation has been made by CALICE group since then. Some preliminary results of the data analysis with the chambers were reported in this workshop [6, 7]. The chambers will also be used for the test of the CALICE Analog hadron calorimeter at DESY. This is a small but good example of inter-regional cooperation.

### 3. TEST-BEAM PLANS

There are two Asian groups working on calorimeter R&D. Each of them has a plan of test-beam experiments.

Table I: List of Asian test-beam facilities

Facility	Momentum	Particles	Status
KEK PS	0.2 ~ 4 GeV	$e, \mu, K, \pi, p, \bar{p}$	Available until Spring 2006.
KEK Linac	0.1 ~ 4 GeV	$e, \mu, K, \pi, p$	Not funded. Hopeless.
J-PARC	0.2 ~ 2 GeV	$e, \mu, K, \pi, p, \bar{p}$	Not available until 2010.
IHEP-Beijing	0.2 ~ 1.2 GeV	$e, \pi, p$	Available. Users are welcome.
Tohoku STB	0.06 ~ 1.2 GeV	$e, \text{tagged-}\gamma$	Available. Users are welcome.

### **3.1. Scintillator-based Calorimeter**

Scintillator-based calorimeter is studied by a collaboration of Japan, Korea, and Russia [8]. For details please refer to talks in this workshop [9–12]. The absorber material is Tungsten for the electromagnetic part and lead or stainless steel for the hadronic part. As the sensitive material fine-segmented scintillator strips/tiles are used, and the scintillator light is read out by small semiconductor photo-sensors such as silicon photo-multipliers. They plan to construct a small prototype of the electromagnetic part by the end of 2006, and to make a beam test at DESY. They also plan to join the combined test beam experiments in 2007 at FNAL.

### **3.2. Silicon-Tungsten Electromagnetic Calorimeter**

Electromagnetic calorimeter with Si-detector and Tungsten are studied by Korean group. They built their first prototype (prototype-I) together with an entire readout electronics, a mechanical support, and a DAQ system. They tested the prototype in 2004 at CERN, and results were presented at this workshop [13]. Their second prototype (prototype-II) is now in progress, with improvement in detector thickness and cooling system. They plan to do a beam test in 2005, whenever available at FNAL, and also plan to do a beam test in October 2006 at CERN.

## **References**

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