Early Afternoon Session

Projects In Progress (names are people presenting):

- Wille: Stacked 24 x 10x10s for High Energy NFS
- Fernandez: Single element Pulse & Charge
- Fernandez: Arrays: small & HUGE
- Deschaux: Many NRS & amplifiers
- Baron: Modular Array
- Baron: Event based electronics
- Herve: Example of integrated system development

Wish List & Just Started (names are people presenting):

- Nage: Diffuse scattering and stroboscopic.
- Leupold: Side entry & ?
- vanBürck: TDI Array
- vanBürck: SRPAC (14.4 & High Energy)
- Agne: High energy fast scintillator (SR PAC)
- Baron: ASIC Discriminator

Modular Array

Project Description

Modular Multi-Element Detector for NFS

Primary People Involved: **A. Baron (SPring-8), T. Deschaux (ESRF)**
baron@spring8.or.jp

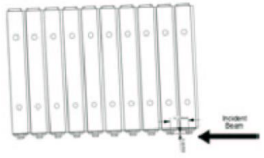
Target Application: **Nuclear Forward Scattering (up to 30 keV)**

Main Characteristics:

1. Time resolution < 200 ps
2. Effective thickness: ~0.5 mm Silicon
3. Acceptance: ~ 1x3 mm
4. Channels: 10 demonstrated, 8 planned
5. Modular setup to allow easy replacement of channels if damaged.
6. Multiple channels should spread out load at high rates.
7. Based on a commercial device (5344 LC, 20 µm thickness, 3mm diameter)

Status: **Under development**
Prototype 10 channel device performed well.
Second device with "improved" amplifier and different housing not stable.
More work planned.

Expected Cost: ~$5000 for parts + Assembly



Project Description

Multiparameter, Multichannel CAMAC Data Acquisition

Primary People Involved: **H. Thiess, A. Baron, T Ishikawa (SPring-8)**
baron@spring8.or.jp

Target Application: **Nuclear resonant scattering - TDI, NSAX, SR-PAC**

Main Characteristics:

CAMAC event based data collection system - similar to nuclear to nuclear data collection setup.
Combines CAMAC ADC and discriminator to read out multiple channels.
Event readout: Several voltages (TAC output, other voltages - say velocity) and channel number
Throughput about 2 kHz over all channels (16 or 32 channels) before dead time increases dramatically.

Status: **Working**

Desired Component

Modular (ASIC!) FAST Discriminator

General Characteristics:

Variable threshold setting: say 0.01 to 0.5 V
Settable by external voltage level (1/10)
Short output pulse: ideal < 1 ns wide, fixed.
Fast reset time: Ideal <2 ns pulse pair resolution
Small profile
Multi-channel (8? 16? 32?)

Possible onboard veto? Probably external/separate is better

This should be useful for nearly all experiments. Note an intermediate design, with slightly large pulse width and worse pulse pair resolution is also interesting.