Pico-Second Workshop VII

Day 3 - "Relatively" Large-Area Detectors, Fast- Timing, and TOFPET
Saturday, February 28, 2009

University of Chicago, Hyde Park Campus
Gaylord and Dorthy Donnelley Biological Sciences Learning Center
924 East 57th Street, Chicago, IL 60637
(For relevant maps, see http://maps.uchicago.edu/indes.shtml)

AM Session Chair: Chin-Tu Chen (UC)

Session 0: Bridging from High Energy Physics Sessions

Topics: Highlights from previous 2-days - overlapping areas on fast-timing

8:30 - 9:00	Summary and Conclusion of Days 1 and 2	Henry Frisch (UC) Patrick LeDu (IPN Lyon)

Session 1: Relatively Large-Area PET Detectors

Topics: MCP, PMT-LSO, PMT-NaI based large-area PET detectors, in-beam PET detectors

9:00 - 9:25	Optimization of TOFPET Detector Systems	Woon-Seng Choong (LBL)
9:25 - 9:45	Experience in Using Large-Area Detector Panels for Building a High-Sensitivity Small-Animal PET Scanner	Chien-Min Kao (UC)
9:45 - 10:10	In-Beam PET ENVISION EU Project	Patrick Le Du (IPN Lyon)
10:10 - 10:25	UPenn Experience with Anger-Logic Detectors for PET	Joel Karp (UPenn)
10:25 - 10:40	Coffee	

Session 2: Time-of-Flight Positron Emission Tomography (TOFPET)

Topics: TOFPET in practice, essential considerations for fast-timing, lessons learned from historic perspectives, and new views on TOFPET image reconstruction

10:45 - 11:05	TOFPET Imaging: Clinical and Research Applications	Joel Karp (UPenn)
11:05 - 11:25	System Optimization for Time-of-Flight PET	Bill Moses (LBL)
11:25 - 12:45	TOFPET - Past, Present and Some Musing on the Future	Tom Lewellen (UWash)
11:45 - 12:00	Some New Perspectives of Utilizing TOF Information for Improving PET Imaging	Chien-Min Kao (UC)
12:40 - 12:45	Break (getting Lunch Boxes)	
12:10 - 1:00	Lunch Discussion: Ideas of Fast Electronics Shared by HEP and PET	Frisch, Varner, LeDu Genat, Ashmanskas

PM Session Chair: Chien-Min Kao (UC)

Session 3: Fast PET Electronics

Topics: Common framework of fast electronics in HEP and PET, open-platform for PET electronics, and event pulse processing toward fast readouts

1:00 - 1:20	Towads An Integrated High Resolution PET System	Jean-Francois Genat (UC)
1:20 - 1:45	An Introduction to OpenPET Electronics	Bill Moses (LBL)
1:45 - 2:05	Investigation of a Transmission-Line Readouts for Building PET Detector Modules	Heejong Kim(UC)
2:05 - 2:25	Toward Reading Out a TOF PET Scanner Using Waveform Digitization	Bill Ashmanskas (UPenn)
2:25 - 2:40	Coffee	

Session 4: New Detectors for PET

Topics: GM-APD (SiPM), timing considerations, and novel detector designs

2:40 - 3:05	GM-APD Arrays for PET Detectors - Challenges and Some Solutions	Tom Lewellen (UWash)
3:05 - 3:25	Limiting Timing-Resolution of Pixellated Semiconductor Detectors	Ling-Jian Meng (UIUC)
3:25 - 3:45	PET Inserts	Yuan-Chuan Tai (Wash U)

Session 6: Discussions

3:45 - 5:00	Future Directions and Potential Collaborations - Challenges, Goals and Constraints	