

# The Factors that Limit Time Resolution in Photodetectors

April 28-29, 2011: University of Chicago  
3rd Floor Conference Room (HEP323); enter 5640 S. Ellis Ave

*Version 1.0*  
*April 20, 2011*

**Thursday April 28, 2011 8:30 am**

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## Welcome and Introduction

8:30 - 8:33	Welcome	Patrick LeDu (IPN Lyon)
8:33 - 8:45	Goals of the Workshop	Henry Frisch (Chicago/ANL)

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## Session 1: Limitations from Signal Sources

8:45 - 9:05	Crystals & Scintillators	Ren-yuan Zhu (CalTech)
9:10 - 9:30	Factors influencing timing resolution of scintillators	Paul Lecoq (CERN)
9:35 - 9:55	Cherenkov light in water (dispersion, scattering)	Kate Scholberg (Duke)
10:00- 10:20	Silicon	Chris Kenney (SLAC)
10:25- 10:45	Gas Detectors	Maxim Titov (Saclay)

10:45 - 11:00 Coffee

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## Session 2: Photocathodes and First Gap (Focusing)

11:00 - 11:20	Bi and Multi-Alkali Photocathodes	John Smedley (BNL)
11:25 - 11:45	GaAs and other III-V Photocathodes	Ivan Bazarov (Cornell)
11:50 - 12:10	Nano-structured Photocathodes	David Schuster (Chicago)

12:10 - 1:15 Lunch (complimentary- brought in from Cedars)

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## Session 3: Micro-Channel Plates

1:30 - 1:50	What is Known Experimentally about Timing Determinants	Anton Tremsin (UCB/SSL/Arradance)
1:50 - 2:10	Simulation of Timing Determinants:Predictions and Results	Neal Sullivan (Arradance)
2:10 - 2:30	Ideas for speed-I	Qing Peng (ANL)
3:00 - 3:30	Ideas for speed-II	Jason McPhate (UCB/SSL)

3:30 - 3:45 Coffee

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## Session 4: Anodes and Signal Formation

4:00 - 4:20	The role of analog bandwidth and S/N in timing	Stefan Ritt (PSI)
4:20 - 4:40	Bandwidths of transmission-line anodes	Jean-Francois Genat (CNRS/IN2P3)
4:40 - 5:00	The development of signals in anode structures	Hervé Grabas (UC/Saclay)
5:00 - 5:20	RF-structured anodes	Dave McGinnis (Fermilab)

6:00 - 8:00 Dinner (Siam Restaurant, 1641 E. 55th St.)

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(OVER for Friday's agenda)

# Friday April 29, 2011 8:30 am

8:30 - 8:40      Announcements      Organizers

## Session 5: Electronics

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8:45 - 9:15	Overview of limitations	Stefan Ritt (PSI)
9:15 - 9:45	Advanced Designs	Dominique Breton (Orsay)
9:45 - 10:15	Dependence on Feature Size	Gary Drake (ANL)
10:15 - 10:45	Noise	Eric Delagnes (Saclay)

10:45 - 11:00      Coffee

## Session 6: Summary

11:00 - 11:45      Group Discussion, Planning, Ideas, Recriminations

11:45-12:00	Summary and Outlook	Patrick Ledu/ Henry Frisch
12:00	End of Workshop	

12:00 - 1:15      Lunch –      Local cafeterias and restaurants

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