OLYMPUS Group Leader Meeting, Jan. 16, 2012

- Head count and funding
- Assignment of thesis topics
- Analysis tasks
- Blinding
- Shift contingencies
- Run coordinators
- Slow control coordinator
- Luminosity coordinator
- Magnetic field

Head count

- Email from Uwe on Jan. 3, 2012

- Number of PhD physicists
  - to determine share of common fund
  - will be evaluated once per year

- Number of PHD physicists plus graduate students
  - to determine shifts contingency
  - will be evaluated now and before fall run

<u>45 physicists, 11 engineers, 10 students, 2 emeriti (Jan. 16, 2012)</u>

Funding

Invoices/Payment of OLYMPUS Common Costs (k€) 06.07.11

institute	cost 1) 2010 + 2011	Payment for 2010	Invoice/paymer July 2011	cost 2) 2012	Invoice/payment Jan. 2012	April 2012	July 2012	cost 3) payment 2013	Remaining April 2013	Aug. 2013	Total payments
Bonn	11.7		11.7	66.7		66.7					78.4
DESY	11.7		11.7	66.7		66.7					78.4
Mainz	9.4			53.4		62.7					62.7
Arizona	2.3		2.3	13.3	6.7		6.7				15.7
Hampton	4.7		4.7	26.7		2.5			12.1	12.1	31.4
Kentucky	2.3		2.3	13.3		6.7			6.7		15.7
MIT	18.7		18.7	106.7		106.7					125.4
New Hampshire	2.3		2.3	13.3		13.3					15.7
Glasgow	9.4		9.4	53.4		53.4					62.7
											0.0
INFN Bari	2.3		2.3	13.3		6.7			6.7		15.7
INFN Ferrara	9.4	11.6	21.4	53.4		14.9			14.9		62.7
INFN Rome	4.7		10.0	26.7		10.0			11.4		31.4
PNPI *	16.4		16.4	93.4		93.4					109.7
Yerevan *	11.7		11.7	66.7		66.7					78.4
sum	117.0	11.6	125.0	666.9	6.7	570.2	6.7		51.7	12.1	783.9
yearly sum			136.6			583.5			63.8		783.9

Comments:
1) final 2010 + estimate 2011
2) final 2011 - estimate 2011 + estimate 2012
3) final 2012 - estimate 2012

Head count is down to 45 (Jan 2012) from 51 (July 2011)
-> ~17kEUR / person

What Magnetic Field?

Cleanliness: Biggest drop of trigger rate between 0% and 50%, some further decrease from 50% to 100%
Tracking quality unknown
Electricity cost is significant (common fund)

High field
Pros: smaller trigger rate; better momentum resolution; better separation of elastic scattering and pion production
Cons: radiative corrections larger/more complicated??;
acceptance differences increasing, possibly increasing systematic uncertainties
High electricity cost

Low field
Pros: Smaller corrections for acceptance; lower electricity cost
Cons: Noisy trigger, poor charge & momentum measurement, more background, possibly increasing systematic uncertainties

Propose to run with 75% for most of the first run. Save 50% of the power cost.
Study variation of trigger rate and cleanliness at 50% and 100%.
Need extensive MC study to determine optimum
Can run at 50% or 100% in fall if found to be preferential

Assignment of thesis topics

- Responsibility and freedom of institutions to assign thesis topics
- Usually driven by a physics topic, less so by technical needs

- There is basically only one physics topic – the e+/e- ratio R
  - Elastic scattering and pion production
  - Can extract R in multiple ways
  - For different detector combinations
  - For different run periods
  - Combined analysis
  - …

- Individual focus
  - Tracking (TOF, WC, GT)
  - Luminosity (GEM, MWPC, SYMB)
  - Efficiency studies
  - Acceptance and backgrounds (MC)
  - Radiative corrections (MC)
  - …

Analysis tasks

Raw data analysis

From TDC&ADC to hits (detector groups responsible) and tracks (analysis group responsible)

Simulation analysis

Detector response and acceptance, radiative effects, backgrounds, extraction of physics, investigation of systematic uncertainties

Luminosity analysis

Three systems for luminosity monitoring

Physics analysis

How to extract e+/e- ratio: combine yields, lumi, MC

More institutions should get involved!
Need specific list of analysis tasks / organize the effort
Need list of people actively involved – J. Bernauer coordinator

Blinding of Analysis

- Expected TPE effect is few % with aimed 1% uncertainty
- There may be no TPE effect! It may be a large one!
- There is reason enough to become biased toward large TPE or small TPE effect

- **Need to blind the analysis in order to remove bias**

- Unblind when at least two analyses are mature enough with systematics well understood – tbd by the collaboration board

Develop strategy how to blind.
It is sufficient to blind the fall run.

Shifts

- First OLYMPUS run from **Fri 1/20 08:00 – Mon 2/27 08:00** (38 days)
- Three shifts 07:45-16:15, 15:45-0:45, 23:45-08:15;
  allow for 30 minutes overlap for shift smooth transition
- Jan 20 – Feb 9: First three weeks 1SL+2SW = 3 people on shift
- Feb 10 – Feb 27: 1SL+1SW = 2 people on shift
- Total of 3*(21*3+17*2) = 291 shifts (114 SL, 177 SW)

- The weight by each institution is the ratio of paying members plus the number of graduate students working on OLYMPUS divided by sum resulting in 5 shifts per person per institute
- Responsibility of institution to determine how shifts are filled

- **Initial list of SL and SW-only**; SL must be qualified
- SW that qualify for SL should soon be determined

- SL responsible for documentation, monitors SW, problems
- SW1 operating DAQ, slow control, and alarms
- SW2 monitoring quality of online data

Shifts from Jan. 20 – Feb. 27

Institution	weight		No. of shifts
Bonn	5	->	25 shifts
DESY	4	->	20 shifts
Mainz	7	->	35 shifts
ASU	2	->	10 shifts
HU	3	->	15 shifts
MIT	11	->	55 shifts
UNH	1	->	5 shifts
Glasgow	4	->	20 shifts
Bari	2	->	10 shifts
Ferrara	4	->	20 shifts
Rome	2	->	10 shifts
PNPI	8	->	40 shifts
Yerevan	6	->	30 shifts
Total	59	->	295 shifts

Run coordinators

- Three postdocs that have been in charge and who are most knowledgeable about all aspects of OLYMPUS

  Jan Bernauer
  Alexander Winnebeck
  Juergen Diefenbach

  in addition: Alexander Kiselev, Christian Funke

- Change weekly on Mondays after weekly meeting at 16:00
  1/16-1/23, 1/23-1/30, 1/30-2/6, 2/6-2/13, 2/13-2/20, 2/20-2/27
  14 hours per day, present at two shift transitions
  24/7 on call, at DESY within 30 minutes

- RC responsible for
  - smooth shift transitions, instruct shift personnel, communication with machine group, daily meeting, report at weekly meeting
  - First contact for problems or emergencies; authorizing access

- Expert(s) of each subsystem on call 24/7

Documentation and Training

- Operating howto's of all components to be provided in Wiki and printed in counting bay
- Shift primer in Wiki and printed in counting bay
- Checklists for shift personnel on Wiki and printed in counting bay
- Shift personnel training: Wednesday+Thursday January 18-19 8am-12noon

OLYMPUS coordinators from now on

Target	R. Milner, MIT
Wire Chambers and GEM Tracker	D. Hasell, MIT
Time of Flight	**M. Kohl, Hampton**
GEM Luminosity Monitor	J. Diefenbach, Hampton
MWPC	A. Kiselev, PNPI
Symmetric Möller	R. Perez Benito, Mainz
Trigger	A. Winnebeck, MIT
Data Acquisition	C. Funke
Slow Control	**J. Bernauer, MIT**
Monte Carlo and Offline Analysis	J. Bernauer, MIT
SiPM Scintillators	**N. D'Ascenzo, DESY**
Luminosity	**J. Diefenbach, Hampton**

Coordinators are responsible for the detailed organization and operation of specific areas of the OLYMPUS experiment.