

# The CKM2008 User's guide

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# A transition edition

- Current generation of exps has finalized a good fraction of the results
  - BaBar, Belle, CLEO, NA48, KTeV, KLOE,...
- Next generation of experiments coming up
  - LHC turning on in the middle of the workshop
  - Future Super-B-Factories and next generation of Kaon experiments under approval process
- Only exception Tevatron, still ramping up with B physics

# Goals of the workshop

- Exchange experimental and theoretical details on current analyses
- Write a book to summarize the experience of the current experiments in the last decade
- Discuss the future perspectives and lessons to be learned by the future generation of experiments

# The Book

- A summary of the achievements in CKM physics in the last decade
  - No such opera since 2001 (report from the first workshop)
- Legacy for the next generation of experiments – handbook for PhD students and post-docs
- Tentative Title: “Flavour physics in the quark sector”
- ~200 pages, i.e. succinct and to the point
- Discussing a proposal with a real editor
  - Eventually Physics Report or Proceeding editors

# Work organization

- Topics split among working groups
- Conveners responsible for harvesting contributions from authors and uniformize them
- Editorial Board responsible for gathering material from WGs, uniformize it and fill the gaps/transitions
- Status:
  - Most of authors have been identified by the WG conveners
  - Parallel sessions should also serve to share and discuss the content of the contributions
  - The editorial board will meet each WG individually during the workshop (either during the sessions or separately)

# Draft T.o.C.

- I. Introduction[5 pages]
- II. Primers[20 pages]
- III. Measurement of the Cabibbo angle:  $|V_{ud}|$  and  $|V_{us}|$  [25 pages]
- IV. Semileptonic  $B$  decays: measurement of  $|V_{ub}|$  and  $|V_{cb}|$  [30 pages]
- V. Rare  $B$  decays and measurements of  $|V_{td}|$  [25 pages]
- VI. Measurements of lifetime and mixing[19 pages]
- VII. Measurement of phases of the CKM matrix elements in tree-dominated processes[25 pages]
- VIII. Measurements of the angles of the unitarity triangle in penguin dominated processes[25 pages]
- IX. Measurement of the CKM matrix elements in  $D$  decays[10 pages]
- X. Global fits to the unitarity triangle and constraints on New Physics[15 pages]

# Changes in format

- Only two parallel sessions
  - Almost a sequel of mini-workshops
- Less conveners
- Less plenary sessions
  - They are already over (a part from the last summary ones on saturday)
- Break out sessions
  - To do real work we encourage to continue discussions that start during the sessions in separate meetings in time where the corresponding WS is not meeting
  - Several rooms reserved for this purpose
  - Please contact Roberta Soldatelli if you need to organize a meeting (write at [ckm2008@roma1.infn.it](mailto:ckm2008@roma1.infn.it) with title “BREAK OUT MEETING” or ask of her at the registration desk

# Working Groups

WG	NAME	Experimental Conveners	Theory Conveners
I	Precise Determination of $V_{ud}$ and $V_{us}$	M. Antonelli	A. Jüttner, V. Cirigliano
II	Determination of $V_{ub}$ , $V_{cb}$ , $V_{cs}$ through Semileptonic B and D decays	R. Kowalewski	A. Kronfeld, M. Neubert
III	Rare B,D,K decays	U. Egede, M. Nakao	U. Haisch
IV	Lifetimes, mixing and the corresponding phases	I. Furic	C. Tarantino
V	$\gamma$ ( $\phi_3$ ) and related measurements	A. Bondar	A. Soni
VI	angles from penguin dominated B(s,d) decays	T. Gershon	Th. Feldmann, L. Silvestrini



# Structure of sessions

	Tuesday 09 September	Wednesday 10 September	Thursday 11 September	Friday 12 September	Saturday 13 September	
8:30			WG III ( $V_{ud}/V_{ts}$ from radiative decays)	WG IV (Mixing phase $\phi_{1,3}$ )		
9:00	Plenary 1 Aula Magna Rettorato	WG I (Rare decays)	Aula Amaldi	WG II ( $V_{ub}$ from inclusive $b \rightarrow \text{charm}$ decays)	Plenary 3 Aula Magna Rettorato	
9:30		Aula Majorana	WG VI (Determination of beta)	Aula Conversi		WG IV (Leptonic and Semileptonic D-decays)
10:00		Aula Amaldi				Aula Amaldi
10:30						
11:00			Coffee break			
11:30	Coffee break	Coffee break	WG III (shared with WGII) ( $b \rightarrow s$ y photon spectrum and moments)	WG V Aula Conversi	Coffee break	
12:00	Plenary 2 Aula Magna Rettorato	WG I (th)	Aula Amaldi	WG II (Discussion, preparation for the written report)	Plenary 3 Aula Magna Rettorato	
12:30		Aula Majorana	WG VI (Hadronic uncertainties)	Aula Conversi		WG IV (D-Dbar Mixing)
13:00			Lunch			
13:30	Lunch	Lunch		Lunch	Lunch	
14:00						
14:30			Beyond the Standard Model	Break out session		
15:00	WG I (Determination of alpha)	WG VI ( $V_{ud}$ )	Aula Amaldi	WG III (Leptonic decays)		
15:30	WG II (Exclusive SL decays: $V_{ub}, V_{cb}, V_{cd}$ )	WG III (Exclusive B $\rightarrow$ V y decays)	WG VI (Future outlook)	WG V Aula Conversi		
16:00	Aula Conversi	Aula Amaldi	Aula Conversi	Aula Majorana	Aula Amaldi	
16:30						
17:00	Coffee break	Coffee break				
17:30	WG I (Miscellanea)	WG VI (Determination of gamma)	WG II ( $V_{cb}$ from inclusive and exclusive decays)	WG IV (K-Kbar and B-Bbar mixing)		
18:00						
18:30	Aula Conversi	Aula Amaldi	Aula Conversi	Aula Amaldi		
19:00						
19:30						
20:00						
20:30						
21:00						
21:30						

WG I	Conveners: A. Juettner, V. Cirigliano
WG II	Conveners: R. Kowalewski, A. Kronfeld, M. Neubert
WG III	Conveners: U. Egede, M. Nakao, U. Haisch
WG IV	Conveners: I. Furic, C. Tarantino
WG V	Conveners: A. Bondar, A. Soni
WG VI	Conveners: T. Gershon, L. Silvestrini, Th. Feldmann

CKM<sub>2008</sub>  
5<sup>th</sup> International Workshop on the CKM Unitarity Triangle

Registration will start on 8th September at 14.30 and it will be held in Sala Giunta - Guglielmo Marconi Building, groundfloor.

# Main events

- **Start of LHC (Wednesday)**
  - CERN webcast will be broadcasted in Aula Amaldi during the pauses between sessions (8-9 a.m., plus coffee breaks and lunch)
- **Visit to the Sistine Chapel (Thursday)**
  - Critical to be in time @ 5:30pm at the entrance of the museum (instructions among registration material)
  - **No shorts and no undressed shoulders**
  - Private busses will leave from the University main entrance at 4:15 pm. If you want to use them, please sign up at the registration desk
- **Social Dinner (Friday)**
  - Will be served in the club of the officials of the italian aviation
    - Elegant attire is encouraged, tie is required (even on jeans, but not on flip-flops ☺ )
    - V.le Universita' #20 (one block from university – see map among registration material)

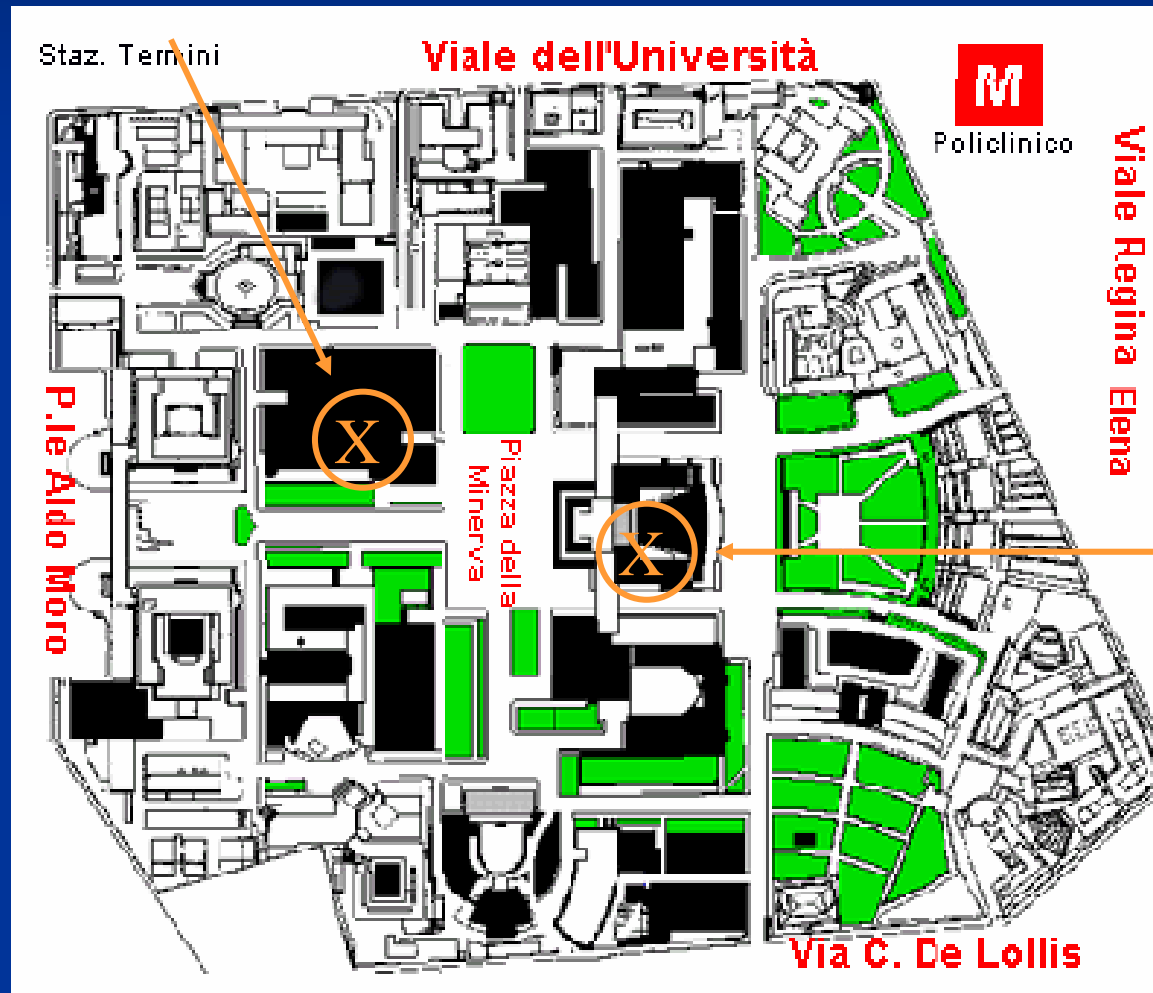
# Technical Details

- **Web page:**
  - <http://ckm2008.roma1.infn.it>
- **Wireless:**
  - SSID: INFN-Web
  - Available on the first floor of the physics department (i.e. in the most used rooms for parallel sessions and break-out meetings)
  - Clear instructions in the registration material (otherwise ask stewarts)
- **Hyper-news system**
  - From the main web page each WG is provided a tool to communicate to a mailing list with archival of the mails
- **Stewarts and locals**
  - Stewarts who volunteered to help and locals are identified by a **red label on the badge. Contact them for any need**

# Campus Site

Physics Dept. : Edificio Marconi

X  
↑  
Casa  
dell'Aviatore



Aula Magna

# Locations

- Lunches and coffee breaks will all be served on the hall of the first floor of the physics department
  - A part from Saturday, which will be here in Aula Magna
  - To avoid infiltrations (we are in the hall of the students building ...) badge will be checked at lunch
- Parallel sessions are in the conf rooms in the ground and first floor of the physics department (follow the signs)
- Registration is in Sala Giunta (ground floor of the Physics Department)

# Extra Meetings

- **Lunch with Conveners and Program Committee**
  - Right after this talk: register if you have not (Sala Giunta) , grab your lunch and go to the Sala Lauree (same floor as the buffet, on the left of it)
- **HFAG**
- **Meetings with editorial board**
  - Author of the various WGs will meet at the following days with the editorial board
    - WGI Wed 12:30
    - WGII Friday 11:30
    - WGIII Wed 15:30
    - WGIV Friday 13:00 (overlunch – Amaldi room)
    - WGV Friday 14:30
    - WGVII Thursday 1pm (overlunch – Majorana room)
- **Beyond the Standard Model session**
  - A special session has been organized by Paolo Gambino on Thursday at 2pm to cover all the new physics topics which are across the WGs

# Committees

- **International Advisory Committee:** Ikarus I. Bigi [Notre Dame U.], Caterina Bloise [LNF, INFN], Andrzej Buras [T.U. Munich], Nicola Cabibbo [Sapienza U.], Augusto Ceccucci [CERN], Paoti Chang [National Taiwan U.], Fernando Ferroni [Sapienza U.], Andrei Golutvin [ITEP], Abolhassan Jawahery [Maryland U.], Andreas Samuel Kronfeld [Fermilab], Youngshin Kwon [Yonsei U.], Michelangelo Mangano [CERN], William Joseph Marciano [BNL], Guido Martinelli [Sapienza U.], Antonio Masiero [Padova U.], Tatsuya Nakada [CERN], Matthias Neubert (Mainz U.), Patrick Roudeau [LAL Orsay], Anthony I. Sanda [Kanagawa U.], Marjorie D. Shapiro [LBL], Ian P.J. Shipsey [Purdue U.], Amarjit Soni [BNL], Wendy Jane Taylor [York U.], Nikolai G. Uraltsev [St. Petersburg, INP] and Masanori Yamauchi [KEK]
- **Program Committee:** Patricia Ball [Durham University and IPPP], Gianluca Cavoto [INFN], Marco Ciuchini [INFN], Riccardo Faccini [Sapienza U. & INFN](CHAIR), Roger Forty [Cern], Stefano Giagu [Sapienza U.], Paolo Gambino [Torino U. & INFN], Benjamin Grinstein [UCSD], Shoji Hashimoto [KEK], Toru Iijima [Nagoya U.], Gino Isidori [LNF, INFN], Vera Luth [SLAC], Giancarlo Piredda [INFN], Marco Rescigno [INFN] and Achille Stocchi [LAL Orsay]
- **Local Organizing Committee:** Daniela Anzellotti, Cristina Bulfon, Gabriella Bucci, Elisabetta Di Silvestro, Riccardo Faccini, Mauro Mancini, Giancarlo Piredda, Roberta Soldatelli (INFN and U. "La Sapienza", Roma)
- **Editorial Board** (still in evolution): G. Cavoto, M. Ciuchini, R. Faccini, S. Giagu, V. Luth, M. Rescigno, A. Stocchi

Thanks to all and let us hope for the success of the workshop!