

# Electric Dipole Moments and g-2 Workshop

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**Welcome**

**on behalf of the organizing committee of  
WG3: Andries van der Schaaf (exp.), YkS  
(exp.), Martti Raidal (theory) and the main  
organizer of the workshops Michelangelo  
Mangano**

# FLAVOUR IN THE ERA OF THE LHC

a Workshop on the interplay of  
flavour and collider physics

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Opening plenary meeting: CERN, November 7-10 2005

2nd meeting (WGs): CERN, Feb 6-8 2006

3rd meeting (WGs): CERN, May 15-17 2006

**4th meeting (WGs): CERN, Oct 9-11 2006**

**Final Plenary meeting: CERN, March 26-29 2007**

# Goal

- The goal of this Workshop is to **outline** and **document** a programme for flavour physics for the next decade, addressing in particular the complementarity and synergy between the LHC and the flavour factories vis a vis the discovery and exploration potential for new physics.

# **WG3: EDM, g-2, Lepton flavour violation,...**

**...In this context the goal of the Working Group 3 (WG3) is to review the status of, and to address the complementarity between, the neutrino physics, cosmological observations and low energy lepton flavour experiments on one hand, and LHC experiments on the other hand.**

# WG3: EDM, g-2

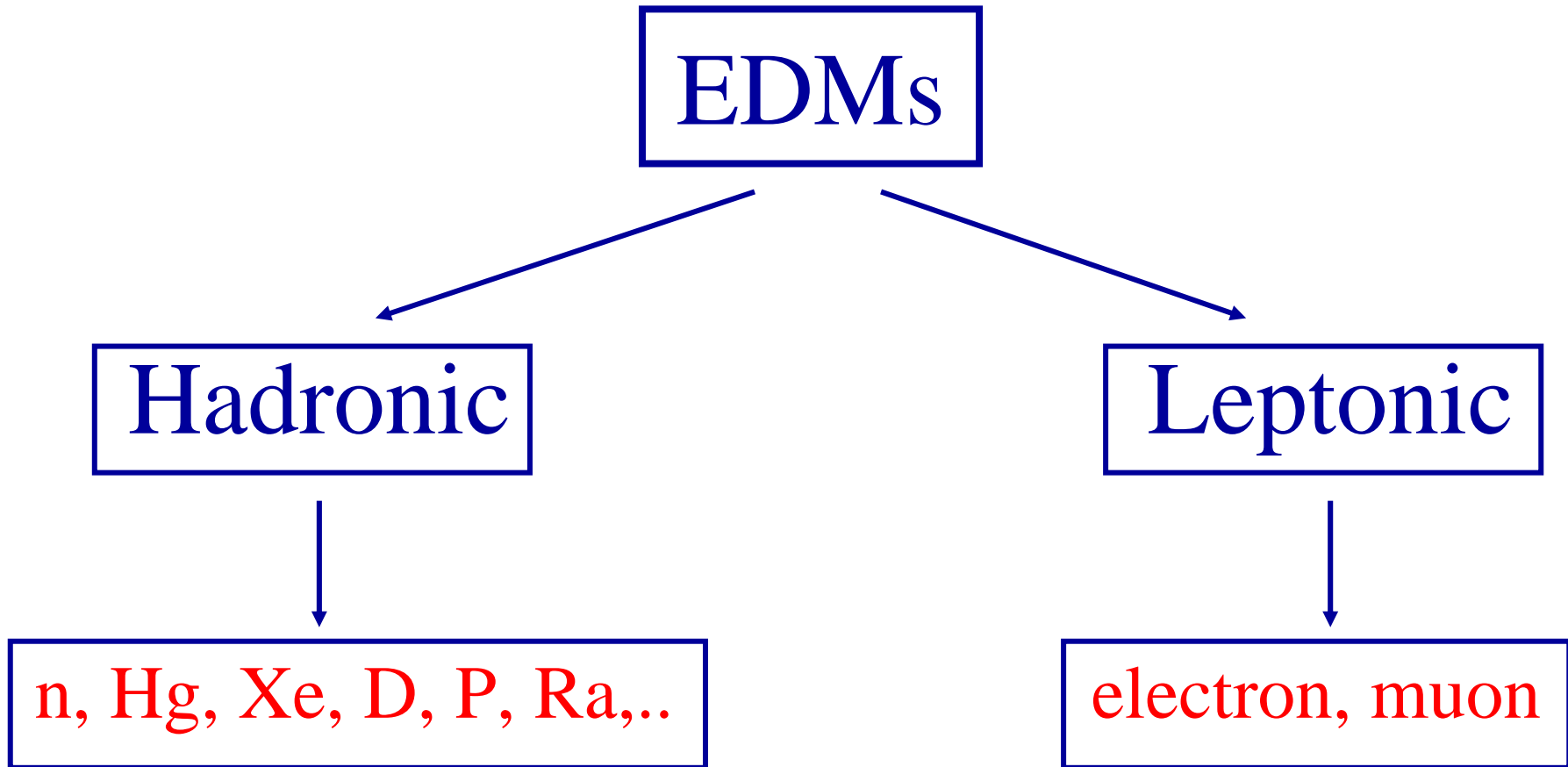
## Experiment & Theory

### EDMs

- leptonic
- hadronic

### g-2

- muon
- electron



# Write-up goal: all major experimental and theoretical efforts to be included

- Theory first:
  1. Physics scale reach
  2. Establish the sensitivity to various physics parameters for each major experiment
  3. Create a TABLE with sensitivity reach for each system

# Experimental efforts

- Description of the method
- Sensitivity goal
- Status of the proposal/idea
- R&D needed, timeline of expected progress
- Critical items
- Timeline of the experimental effort
- Create a TABLE with goals and expected results



# Experts that agreed to contribute to the write-up:

- M. Davier, W. Marciano,... (g-2 theory)
- L. Roberts (g-2 experiment)
- J. Hisano, A. Ritz, M. Pospelov (Hadronic EDMs, theory)
- R. Timmermans (hadronic EDMs, theory)
- R. Holt, K. Jungmann (Ra, Rn, exp.)
- Y. Orlov, YkS,.. (deuteron, muon, exp.)
- P. Harris (neutron, exp.)
- K. Kirch (neutron, exp.)
- I. Masina, ... (leptonic EDMs, theory)
- E. Hinds (electron, exp.)
- D. DeMille, N. Shafer-Ray (electron, exp.)
- ...

# Writing Instructions at

<http://www.physik.unizh.ch/~andries/WG3report>

- 6 EDM's and g-2 experiment Semertzidis
- 6.1 EDM's Semertzidis
- 6.1.1 neutron Harris/Kirch
- 6.1.2 electron Hinds/DeMille
- 6.1.3 deuteron Miller/Semertzidis/Stephenson
- 6.1.4 nuclei Fortson/Romalis/Holt/Jungmann
- 6.2 g-2 Roberts/Semertzidis
- 6.2.1 muon Roberts
- 6.2.2 electron Gabrielse

# Summary

- The physics reach of the EDM, T-violating and g-2 exps will be shown
- Theory and experiment of EDM/g-2 presented together
- Most of the major EDM and g-2 efforts are adequately represented.
- Enjoy the meeting!