

32nd RD50 Workshop, Hamburg, 4-6. June 2018



RD50 – Latest News – June 2018

... recent discussions with the LHCC

Gianluigi Casse

*University of Liverpool, UK
& FBK-CMM, Trento, Italy*

Michael Moll

CERN, Geneva, Switzerland

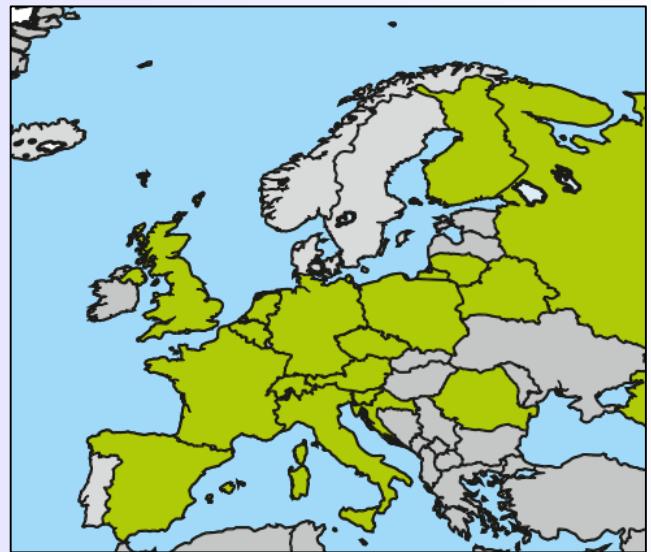


The RD50 Collaboration

- **RD50: 59 *institutes* and 345 members**

50 European institutes

Austria (**HEPHY**), Belarus (Minsk), Belgium (Louvain), Czech Republic (Prague (3x)), Finland (Helsinki, Lappeenranta), France (Paris, Orsay),
 Germany (Dortmund, Erfurt, Freiburg, Hamburg (2x), Karlsruhe, Munich(2x)), Italy (Bari, Perugia, Pisa, Trento, Torino), Kroatia (Zagreb), Lithuania (Vilnius), Netherlands (NIKHEF), Poland (Krakow, Warsaw(2x)), Romania (Bucharest (2x)), Russia (Moscow, St.Petersburg), Slovenia (Ljubljana), Spain (Barcelona(3x), Santander, Sevilla (2x), Valencia), Switzerland (CERN, PSI, Zurich), United Kingdom (Birmingham, Glasgow, Lancaster, Liverpool, Oxford, RAL)



7 North-American institutes

USA (BNL, Brown Uni, Fermilab, **LBNL**, New Mexico, Santa Cruz, Syracuse)

1 Middle East institute

Israel (Tel Aviv)

1 Asian institute

India (Delhi)

Detailed member list: <http://cern.ch/rd50>

RD50 Organizational Structure

Co-Spokespersons

Gianluigi Casse and *Michael Moll*

(Liverpool University, UK
& FBK-CMM, Trento, Italy)

(CERN EP-DT)

Defect / Material Characterization

Ioana Pintilie
(NIMP Bucharest)

- Characterization of microscopic properties of standard-, defect engineered and new materials pre- and post-irradiation
- DLTS, TSC,
- SIMS, SR, ...
- NIEL (calculations)
- Cluster and Point defects
- Boron related defects

Detector Characterization

Eckhart Fretwurst
(Hamburg University)

- Characterization of test structures (IV, CV, CCE, TCT,..)
- Development and testing of defect engineered devices
- EPI, MCZ and other materials
- NIEL (experimental)
- Device modeling
- Operational conditions
- Common irradiations
- Wafer procurement (M.Moll)
- Acceptor removal (Kramberger)
- TCAD simulations

New Structures

Giulio Pellegrini
(CNM Barcelona)

- 3D detectors
- Thin detectors
- Cost effective solutions
- Other new structures
- Detectors with internal gain
- LGAD: Low Gain Avalanche Det.
- Deep depleted Avalanche Det.
- Slim Edges
- HVC MOS
- LGAD (S.Hidalgo)
- HVC MOS (E. Vilella)
- Slim Edges (V.Fadeyev)

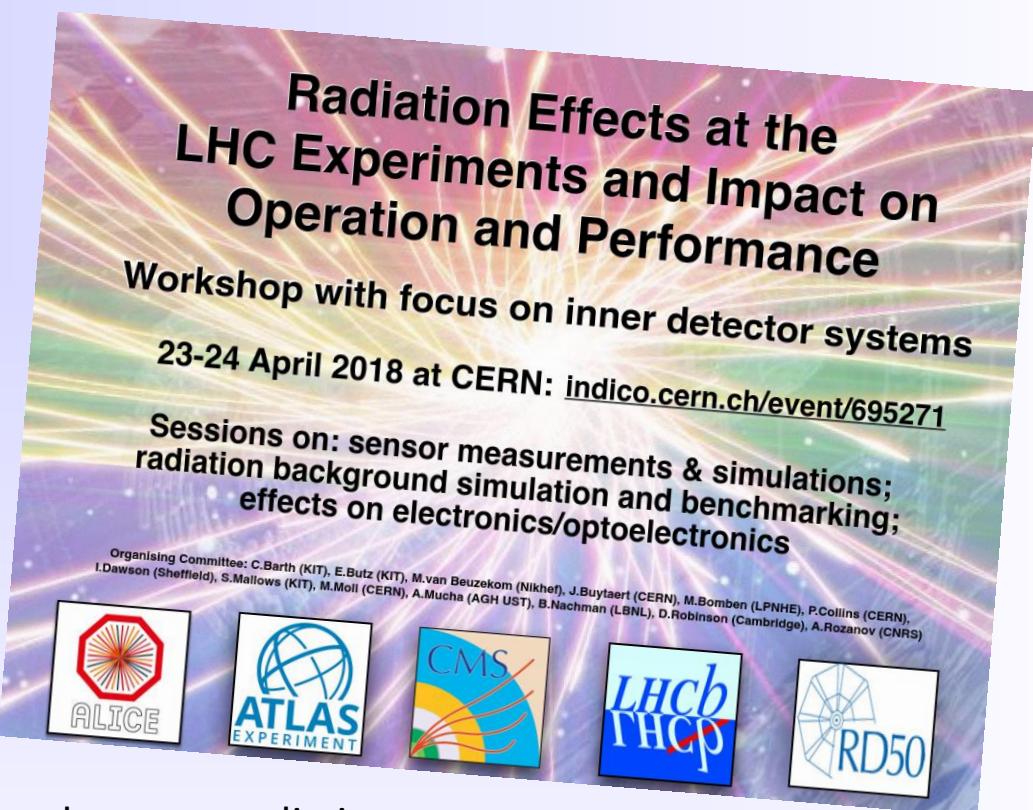
Full Detector Systems

Gregor Kramberger
(Ljubljana University)

- LHC-like tests
- Links to HEP(LHC upgrade, FCC)
- Links electronics R&D
- Low rho strips
- Sensor readout (Alibaba)
- Comparison:
 - pad-mini-full detectors
 - different producers
- Radiation Damage in HEP detectors
- Timing detectors
- Test beams (M.Bomben & G.Casse)

Collaboration Board Chair & Deputy: G.Kramberger (Ljubljana) & J.Vaitkus (Vilnius), Conference committee: U.Parzefall (Freiburg)
CERN contact: M.Moll (EP-DT), Secretary: V.Wedlake (EP-DT), Budget holder & GLIMOS: M.Moll & M.Glaser (EP-DT)

- **Radiation Effects at LHC Experiments and Impact on Operation and Performance**
 - Common Workshop: (ALICE), ATLAS, CMS, LHCb, RD50 [<https://indico.cern.ch/event/695271/>]
 - CERN, 23-24 April 2018
 - 4 sessions:
 - Sensor Measurements
 - Electronics/Optoelectronics
 - Radiation Background Simulation and Monitoring
 - Sensor Simulation
 - **Workshop statistics:**
 - 124 participants
 - 32 talks, discussion sessions
 - **Outcome and follow-up:**
 - Generally: good agreement between damage predictions by RD50 models (“Hamburg model”) and radiation damage observed by the experiments.
 - Report under preparation to summarize observations, compare results of different experiments against each other, list open questions and outline further work
 - ...follow-up workshop anticipated for early 2019



- The LHCC (Large Hadron Collider Committee) is reviewing the LHC experiments and the CERN RD experiments, i.e. also RD50
- On 1. May we received the request to produce a detailed work plan for the coming years
- Thanks to the contribution of the RD50 institutes and especially the research line conveners we could submit the work plan on 13. May to the LHCC: **Many thanks for all contributions!**
 - Document: "RD50 Prolongation Request"
 - Covering the years 2018 to 2023
 - Containing 67 milestones
- First feedback from LHCC very positive.

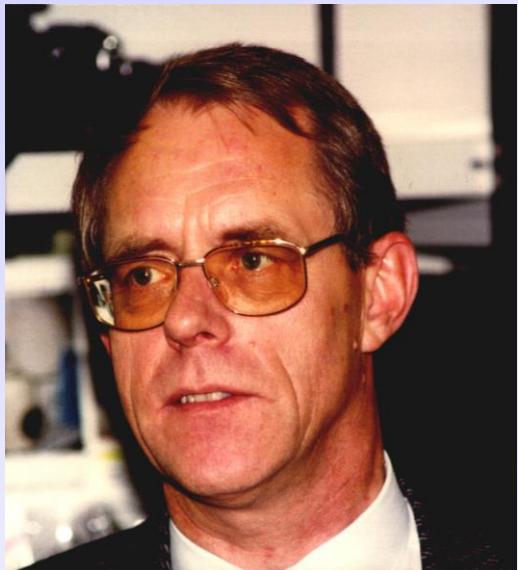
Take a look!

....and make this program happen!

<https://cds.cern.ch/record/2320882/files/LHCC-SR-007.pdf>



- Happy Birthday Eckhart



Dr. Eckhart Fretwurst

80 years