# PP Group Meeting

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I'm working on...

RAL

- Radiation tests of FPGAs (active components) of the NA62 integrated TDAQ board with a neutron beam performed at STFC RAL →

- (In Bham) Assembly of new photon detector system for the upgrade of the Kaon cherenkov TAGger (KTAG) to be used in the data taking of NA62 starting in October 2014 →

Astro clean room underground

  – In the picture: one light box equipped with 48 single anode PMTs, cabling to HV patch panel, cabling to front-end NINO ASIC board. KTAG photon detector composed by 8 light boxes (5 of them already installed at CERN)

- Installation and commissioning of KTAG at CERN - last stage at the end of September ☺ →

CERN

- Study of software triggers produced by KTAG to be used in L1/L2 trigger – mandatory element to allow the experiment to take data at all at high rate

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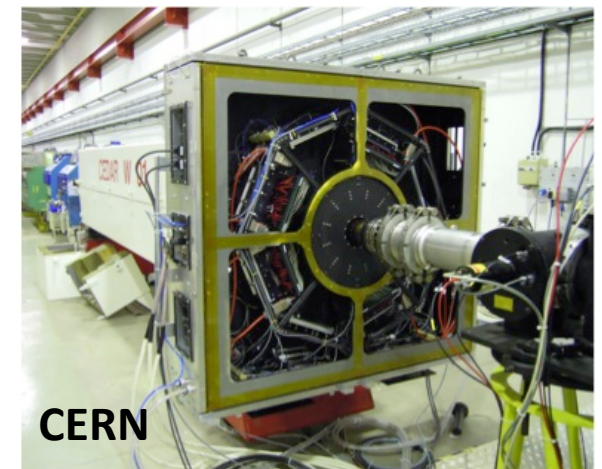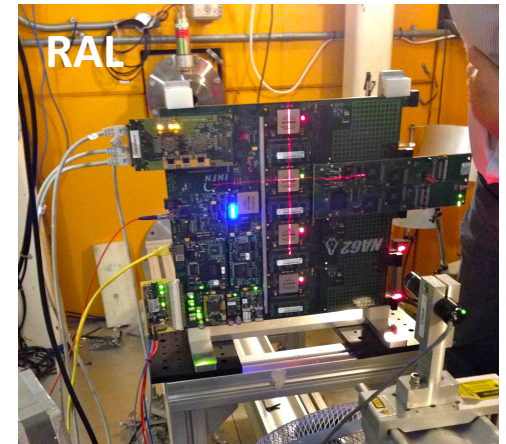
What's next - I

- **Write article on rare K->$e\nu\gamma$ decay channel**:
  - data analysis started during my PhD with NA62 data collected in 2007/8 (data taking with partial detector from NA48)
  - BR model independent and ChPT form factor measurements
  - Precision (few%) dominated by systematics due to background contamination

- **Write article on radiation tests of commercial FPGAs** performed at RAL with muon and neutron beams
  - Focus on SEE cross section measurements

- Active and **substantial involvement** (50% presence on site) in the **NA62 data taking at CERN** (October-December 2014)
  - Full NA62 Detector&Readout commissioning
  - x10 lower intensity kaon beam, address SM BR($K^+->\pi^+\nu\nu$)

What's next - II

- In charge of the Kaon reconstruction and KTAG primitive production for trigger purposes to be tested in 2014 and

  – mainly used in NA62 physics runs (2015-16-17 before LS2) devoted to measurement of BR($K^+ \to \pi^+ \nu\nu$) at 10% precision

  – also requested for the acquisition in parasitic mode of control samples for secondary studies in NA62 (LFNV decays, Heavy Neutral Lepton (HNL) decays, more exotic decays..)

- New Data Analysis of rare K->$e\nu\gamma$ decay channel with data collected in NA62 2015-16-17 physics runs

  – Kaon tracking, veto systems, improved background rejection

  – Aim to improve precision to sub-percent level wrt same study (my PhD thesis) performed with NA62 2007/8 data