update

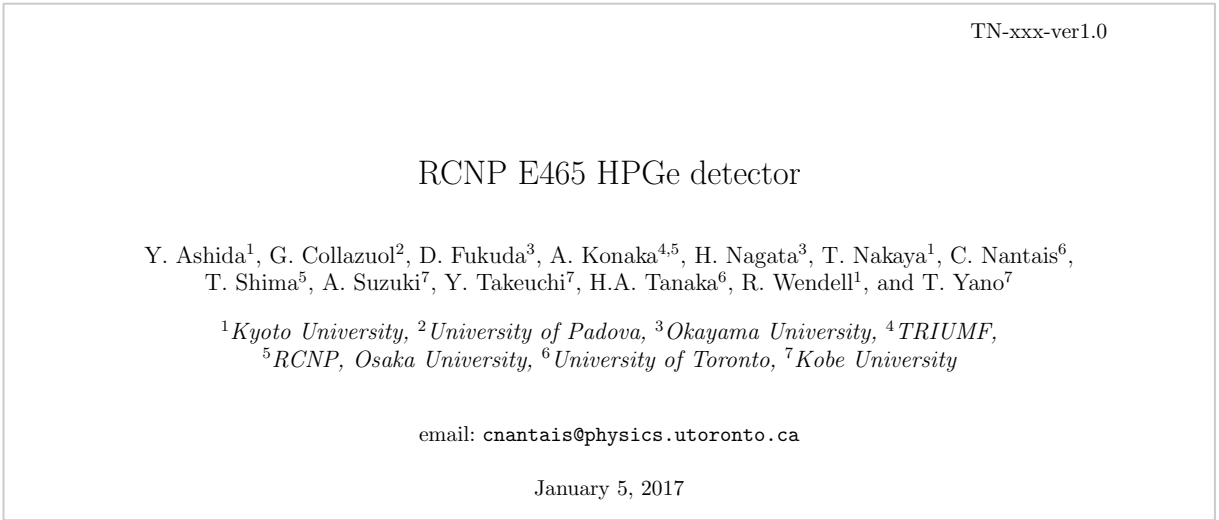
- E465 HPGe TN
- ncgamma secondary neutron measurements
- SK LOWE school
- travel plans

Corina Nantais
Group Meeting
05 January 2017

E465 HPGe (**H**igh **P**urity **Ge**rmanium) TN (T2K **T**echnical **N**ote)

Repeating analysis

- scripts, instead of manual analysis
- comparing rates of runs
- improving combination of runs
- improving energy calibration
- will improve resolution calibration
- will improve peak area selection
- will improve FLUKA efficiency simulation
- will calculate de-excitation gamma limits



TN-xxx-ver1.0

RCNP E465 HPGe detector

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Contents

ncgamma secondary neutron measurements

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pilot experiment E465 @ RCNP	80 MeV	10–13 June 2016
@Tohoku University CYRIC	70 MeV	17–18 November 2016
parasite experiment @RCNP	392 MeV	20 February 2017
pilot experiment E487 @ RCNP	80 MeV	March/April 2017

…

final experiment @ RCNP	392 MeV	TBD

SK LOWE school

- 11–16 March 2017
- bluejeans (but time difference…)

I'm interested in:

- SK detector (e.g., triggers)
- Kamioka computer system (e.g., NQS)
- offline analysis (e.g., data flow, superscan)
- **skdetsim**
- analysis tools (e.g., **BONSAI, direction reconstruction, energy reconstruction**)
- WIT
- calibration (e.g., **vertex resolution, energy resolution, systematics**)

travel plans

14–23 January 2017
T2K-SK shifts

February 2017
4–11 T2K CM (Collaboration Meeting)
12–14 preparation for parasite @ RCNP?
15–21 SK shifts

March/April 2017
E487 @ RCNP?

extra slides

Y. Takeuchi

sklowe-school-v3.pdf

LOWE school plan (2016/12/01)

	Morning 9:30-11:30	Afternoon1 13:00-15:00	Afternoon2 15:30-17:30
1st day	SK detector	Kamioka computer system	Exercise (login, environment setup, use NQS)
2nd day	Off-line analysis	Off-line analysis	Exercise (skofl, event display)
3rd day	skdetsim	skdetsim	Exercise (skdetsim, uniform electrons)
4th day	analysis tools, sample programs	sample programs, lowe shift	Exercise (run sample programs)
5th day	Solar analysis, oscillation analysis	Solar analysis, oscillation analysis	Exercise (run solfit)
6th day	Relic analysis, WIT	Energy calibration	Constant files

1. SK detector
    1. Homework: read SK detector NIM paper, read NIM calibration paper
    2. new front-end electronics (QBEE)
    3. 48-bit clock
    4. Software trigger

2. Kamioka computer system
    1. Text: computer system on-line manual
    2. Servers (kmgate, kmvpn, kmcvs, www-sk, sukap, sukman)
    3. How to login (local, via kmgate, via kmcvs)
    4. How to use NQS system

3. Off-line analysis basics
    1. Homework: general knowledge on Linux, FORTRAN, C++, GNU make, gcc, gfortran, ROOT, SVN, etc.
    2. Real-time process (WIT, data flow, major processes)
    3. SKOFL library (structure, how to make local copy, compile, modify, commit)
    4. Data format (SKROOT)
    5. How to read an event (SKREAD, SKRAWREAD, skoptn, skbadopt, Fortran common)
    6. How to use event display (superscan, disp)
    7. Constant files (location, how to use)
        1. Connection table, TQ map, Dark rate, Bad channel, water transparency, LOWE live time, TBA table, gain table

4. Skdetsim
    1. How to get local copy
    2. Explanations on skdetsim
    3. How to make uniform electrons

5. LOWE analysis tools
    1. Variable names & explanations (make dictionary)
    2. Muon reconstruction (mufitpe, muboy)
    3. Low-e event reconstruction
        1. Vertex reconstruction (BONSAI fit, clusfit, Kai fit)
        2. Direction reconstruction
        3. Energy reconstruction

6. LOWE sample programs
    1. Text: $(SKOFL_ROOT)/examples/{lowe,skroot}
    2. lowfit, mufit, mcfit, read_root
    3. lomufit_sle.F

7. LOWE shift
    1. Explanation of system, plots, how to check, etc.

Advanced session

8. Solar analysis
    1. SLE reduction
    2. 1st reduction
    3. Spallation cut
    4. 2nd reduction
    5. Final data sample, XBACK
    6. B8 MC (b8all, vectgen, skdetsim, mcfit, b8count, XANG)
    7. Solfit (basic, MSG)
    8. Oscillation analysis (tools, data bases, how to run)

9. Relic analysis
    1. (I don't know well…) relic cuts, muon extraction, BFF, final sample (?)

10. WIT system

11. Energy calibration for LOWE
    1. Ni, DT, LINAC
    2. Resolutions (vertex, energy, angular), systematic uncertainties

12. How to make constant files (may not be needed)
    1. Bad channel, watert, petable, live time table, bad run list
    2. TBA table, Enelf function
    3. Spallation likelihood function, deadvol function