



**From:** Monroe, Jocelyn Jocelyn.Monroe@rhul.ac.uk  
**Subject:** Re: [EXT] HPTPC analysis and hardware meeting, Fri, 22/11, 10:30 Uk time  
**Date:** December 5, 2019 at 6:12 PM  
**To:** Waldron, Abigail V a.waldron@imperial.ac.uk  
**Cc:** Alexander Deisting Alexander.Deisting@rhul.ac.uk, Dunne, Patrick J p.dunne12@imperial.ac.uk, Brailsford, Dominic d.brailsford@lancaster.ac.uk, Sammy Valder sammyvalder@gmail.com, Alexander Korzenev korzenev@mail.cern.ch, Atkin, Edward T e.atkin17@imperial.ac.uk, Zachary Chen-Wishart Zachary.Chen-Wishart.2016@live.rhul.ac.uk, Adriana Dias Adriana.Dias.2011@live.rhul.ac.uk, Gary Barker g.j.barker@warwick.ac.uk, Haigh, Jennifer J.Haigh.2@warwick.ac.uk, Jones, Sebastian sebastian.jones.17@ucl.ac.uk, Asher Kaboth Asher.Kaboth@rhul.ac.uk, Nichol, Ryan r.nichol@ucl.ac.uk, Nonnenmacher, Toby toby.nonnenmacher14@imperial.ac.uk, Nowak, Jaroslaw j.nowak@lancaster.ac.uk, Will Parker William.Parker.2016@live.rhul.ac.uk, Philip Hamacher-Baumann hamacher.baumann@physik.rwth-aachen.de, Philippe Mermod Philippe.Mermod@cern.ch, Harrison Ritchie-Yates Harrison.Ritchie-Yates.2013@live.rhul.ac.uk, Steven Boyd S.B.Boyd@warwick.ac.uk, Thorpe, Chris c.thorpe@lancaster.ac.uk, Uchida, Melissa A m.a.uchida@imperial.ac.uk, Joe Walding Joseph.Walding@rhul.ac.uk, I.cremonesi@ucl.ac.uk, Wascko, Morgan m.wascko@imperial.ac.uk, Annora Sundararajan Annora.Sundararajan.2017@live.rhul.ac.uk, Adam Tarrant Adam.Tarrant.2015@live.rhul.ac.uk

Hi All,

To organize the discussion at the HPTPC meeting tomorrow, will the people named in the minutes from our previous meetings below please prepare to report on the following:

from the 11.29.19 minutes:

#### Instrumentation Paper

Charge gain analysis - **action item run on good run list with Ed's cuts - Ed?**

There needs to be a section on clustering - Patrick will write. Also section on data cleaning, Alexander and/or Ed? Abbey and Zack will work on light gain analysis plots.

from the 10.18.19 minutes:

Begin forwarded message:

**Subject: [Minutes] HPTPC hardware and analysis meeting, Fr. 18.10**

HPTPC instrumentation paper status

- Who will look into which plot
- CCD figure:
- Spark and sources plot with sources in final places (Will)
- Results of clustering on calibration sources (Abbey)
- Light vs. Vip (Zach or reassign this)
- Light yield for different gas concentrations (Abbey + Zach)
- Noise stability plot (Zach)
- e/photon ratio vs. light gain (punt on this for IEEE)
- Waveform figures:
- Example waveform (Ed)
- Overlay of test pulse and pre-amp output pulse (Harrison, Adam + Alexander)
- Pulse height spectrum for test pulses (Harrison + Adam + Alexander)
- Pre-amp calibration demonstration (Harrison, Adam + Alexander)
- Demonstration of noise subtraction (Alexander)
- MC energy spectra: Fe, cosmics (Alexander)
- Amplitude spectra Fe (Ed)
- Charge gain vs. voltage for different pressures (Ed + Alexander)

Best regards,  
Jocelyn

On Nov 29, 2019, at 10:50 AM, Waldron, Abigail V <a.waldron@imperial.ac.uk> wrote:

Hey Everyone,

Here are the minutes for today's meeting, enjoy!

*In attendance: Asher, Morgan, Patrick, Abbey, Seb, Adam, Harrison, Zack, Jocelyn*

#### Hardware update

Can pump down and fill darco for GEM stack test, need to get a cable. The new burst disks have arrived at Imperial and Asher will bring them in on Monday. HPTPC running with pure CF4 - saw a track. Discussion about data taking plan - finish off Fe55 study. Technical scope of work needs preparing in December-ish, Patrick will start work soon, needs reminding.

#### Team CCD

Looking into pedestal jumps (correlated across columns). New additional calibration technique to deal with jumping columns (which happen event to event) by averaging all non source pixels and calibrating on a per event basis. Light gain analysis started - work in progress.

#### Instrumentation Paper

Charge gain analysis - **action item run on good run list with Ed's cuts - Ed?**

There needs to be a section on clustering - Patrick will write. Also section on data cleaning, Alexander and/or Ed? Abbey and Zack will work on light gain analysis plots.

#### AOB

Be careful opening the burst disks. Will change the meeting agenda to start with the instrumentation paper and only focus on things related to the papers over the next few weeks (no darco/oroc).

**Action item - update instrumentation paper on overleaf to be up to date with version in git if it is not already - Alexander.** We will be using overleaf to edit.

Have a lovely weekend, cheers,

Abbey

---

**From:** Waldron, Abigail V <a.waldron@imperial.ac.uk>

**Sent:** 28 November 2019 16:14

**To:** Deisting, Alexander <Alexander.Deisting@rhul.ac.uk>; Dunne, Patrick J <p.dunne12@imperial.ac.uk>; Brailsford, Dominic <d.brailsford@lancaster.ac.uk>; Sammy Valder <sammyvalder@gmail.com>; Alexander Korzenev <korzenev@mail.cern.ch>; Atkin, Edward T <e.atkin17@imperial.ac.uk>; Chen-Wishart, Zachary (2016) <Zachary.Chen-Wishart.2016@live.rhul.ac.uk>; Dias, Adriana (2011) <Adriana.Dias.2011@live.rhul.ac.uk>; Gary Barker <g.j.barker@warwick.ac.uk>; Haigh, Jennifer <J.Haigh.2@warwick.ac.uk>; Jones, Sebastian <sebastian.jones.17@ucl.ac.uk>; Kaboth, Asher <Asher.Kaboth@rhul.ac.uk>; Monroe, Jocelyn <Jocelyn.Monroe@rhul.ac.uk>; Nichol, Ryan <r.nichol@ucl.ac.uk>; Nonnenmacher, Toby <toby.nonnenmacher14@imperial.ac.uk>; Nowak, Jaroslaw <j.nowak@lancaster.ac.uk>; Parker, William (2016) <William.Parker.2016@live.rhul.ac.uk>; Philip Hamacher-Baumann <hamacher.baumann@physik.rwth-aachen.de>; Philippe Mermod <Philippe.Mermod@cern.ch>; Ritchie-Yates, Harrison (2013) <Harrison.Ritchie-Yates.2013@live.rhul.ac.uk>; Steven Boyd <S.B.Boyd@warwick.ac.uk>; Thorpe, Chris <c.thorpe@lancaster.ac.uk>; Uchida, Melissa A <m.a.uchida@imperial.ac.uk>; Walding, Joseph <Joseph.Walding@rhul.ac.uk>; L.cremonesi@ucl.ac.uk <l.cremonesi@ucl.ac.uk>; Wascko, Morgan <m.wascko@imperial.ac.uk>; Sundararajan, Annora (2017) <Annora.Sundararajan.2017@live.rhul.ac.uk>; Tarrant, Adam (2015) <Adam.Tarrant.2015@live.rhul.ac.uk>

**Subject:** Re: HPTPC analysis and hardware meeting, Fri, 22/11, 10:30 Uk time

Hey Everyone,

We'll have our next HPTPC analysis and software meeting tomorrow at 10am UK time. The agenda can be found here: <https://indico.cern.ch/event/867767/> please let me know if you have something specific to present? Cheers,

Abbey & Alexander

---

**From:** Deisting, Alexander <Alexander.Deisting@rhul.ac.uk>

**Sent:** 21 November 2019 17:29

**To:** Waldron, Abigail V <a.waldron@imperial.ac.uk>; Dunne, Patrick J <p.dunne12@imperial.ac.uk>; Brailsford, Dominic <d.brailsford@lancaster.ac.uk>; Sammy Valder <sammyvalder@gmail.com>; Alexander Korzenev <korzenev@mail.cern.ch>; Atkin, Edward T <e.atkin17@imperial.ac.uk>; Chen-Wishart, Zachary (2016) <Zachary.Chen-Wishart.2016@live.rhul.ac.uk>; Dias, Adriana (2011) <Adriana.Dias.2011@live.rhul.ac.uk>; Gary Barker <g.j.barker@warwick.ac.uk>; Haigh, Jennifer <J.Haigh.2@warwick.ac.uk>; Jones, Sebastian <sebastian.jones.17@ucl.ac.uk>; Kaboth, Asher <Asher.Kaboth@rhul.ac.uk>; Monroe, Jocelyn <Jocelyn.Monroe@rhul.ac.uk>; Nichol, Ryan <r.nichol@ucl.ac.uk>; Nonnenmacher, Toby <toby.nonnenmacher14@imperial.ac.uk>; Nowak, Jaroslaw <j.nowak@lancaster.ac.uk>; Parker, William (2016) <William.Parker.2016@live.rhul.ac.uk>; Philip Hamacher-Baumann <hamacher.baumann@physik.rwth-aachen.de>; Philippe Mermod <Philippe.Mermod@cern.ch>; Ritchie-Yates, Harrison (2013) <Harrison.Ritchie-Yates.2013@live.rhul.ac.uk>; Steven Boyd <S.B.Boyd@warwick.ac.uk>; Thorpe, Chris <c.thorpe@lancaster.ac.uk>; Uchida, Melissa A <m.a.uchida@imperial.ac.uk>; Walding, Joseph <Joseph.Walding@rhul.ac.uk>; L.cremonesi@ucl.ac.uk <l.cremonesi@ucl.ac.uk>; Wascko, Morgan <m.wascko@imperial.ac.uk>; Sundararajan, Annora (2017) <Annora.Sundararajan.2017@live.rhul.ac.uk>; Tarrant, Adam (2015) <Adam.Tarrant.2015@live.rhul.ac.uk>

**Subject:** HPTPC analysis and hardware meeting, Fri, 22/11, 10:30 Uk time

Dear all,

since many people are away we'll have only a short meeting tomorrow, at the unusual time of 10:30 Uk time. The agenda can be found here: <https://indico.cern.ch/event/866119/> So far we have only one contribution from Seb - an update on his studies for the beam paper.

See/hear you tomorrow,  
Alexander

Jocelyn Monroe  
Professor of Physics,  
Royal Holloway University of London  
Department of Physics, W254  
Egham, Surrey TW20 0EX  
[jocelyn.Monroe@rhul.ac.uk](mailto:jocelyn.Monroe@rhul.ac.uk)

