

Hello PGs

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European Research Council
Established by the European Commission

Particle Physics Group

- Unique: Theory+Experiment all in one!
 - Analyses, detectors, accelerators, (nuclear)
 - Cross-links!
- Big & sociable
 - Floors 5+6+7
 - Coffee club in floor 6
 - Usually 10:30 & 3:30 coffee times
 - The "Fred tradition": don't dare to travel without bringing some sweets back with you





Supervisors

- You have usually 2 supervisors
 - **Primary and co-supervisor**
 - **+ 1 advisor**, usually from different area
- If you have a project:
talk with supervisor, get office, desk, computer
- If you do not yet have a project:
 - Get info, rank projects, talk with me...
 - Once you have one (end of the week/start next week):
talk with supervisor, get office, desk, computer

Some Basics

- **Be around!**
 - If you want to stay work from home, come significantly later, etc: ask your supervisor first
 - Team work only works with a team
- **Working in a team**
 - Regularly keep in touch with supervisor(s)
 - Same for postdocs/students.....
- **Holidays**: you can take some, but in accordance with supervisor





Courses

- PhD: no fixed requirements, but you can take some
- SEM 1:
 - FPP I, QFT, Gravitation
- SEM 2:
 - FPP II, Gauge Theories, C++, Early Universe, Adv QM
- If you want to attend courses: talk first with your supervisor(s)
 - Then register (with PG course codes)
- If you want to participate yourself in teaching: talk to supervisor
 - e. g. lab demonstration

In case of issues

- **Problems:** talk with
 - Supervisor → Advisor → Anybody else (within group or outside)
→ **communication is everything!**
- For administration: Admin staff
 - **Catherine** (6th next to coffee area)
Secretary, bookings, stationery etc
 - **Sabah** (6th other side of coffee area): Computing
- Handbooks
 - On web (also Teachweb and Eprog)
- If in doubt whom to address: don't hesitate to ask me!



Project Allocation

- Project allocation
 - Some pre-ordained to some extent through funding
 - Project talks right hereafter
 - Opportunity to discuss with prospective supervisors!
- **For non-allocated students:**
 - Step 1 (today): listen to talks, talk to potential supervisors
 - Step 2 (thursday): Preference list to me!
 - List in order of preference
 - In case of concerns (or totally not wanting some project): talk to me!
 - Step 3: allocation by end of the week
 - Step 4: get project started next week





Projects

Project	PhD/ MSc	Area	Supervisor(s)	Student
Charged Higgs search in ttbb	PhD	ATLAS/ theory	Yvonne Peters/ Apostolos Pilaftsis	Emily Orgill
Top-tagging and colour flow for boosted top analyses	PhD	ATLAS/ theory	Yvonne Peters/ Mrinal Dasgupta	Jacob Rawling
Monolithic Active Pixel Sensors for tracking at the ATLAS High luminosity Upgrade and beyond	PhD	(ATLAS)	Yvonne Peters	Thomas Daubney (DESY)
4-top searches in ATLAS	PhD	ATLAS	Yvonne Peters	Nick Bedford (DESY)
Multi-channel searches for sterile neutrinos at the Fermilab Short-Baseline Neutrino Facility	PhD	SBN	Georgia Karagiorgi/ Justin Evans	Davio Cianci
Analysis of MicroBooNE data	PhD	MicroBooNE	Stefan Söldner- Rembold	Davide Porzio
Measurements of charm mixing and CP violation in $D_0 \rightarrow K_S \pi \pi$ decays and development of detector alignment frameworks	PhD	LHCb	Chris Parkes/ Marco Gersabeck	Chris Burr
Searches for physics beyond the Standard Model with rare semi-leptonic charm decays	PhD	LHCb	Marco Gersabeck/ Chris Parkes	Igor Babuschkin
Construction and quality assurance of a VELO upgrade module prototype	MSc	LHCb	Chris Parkes	Toby Nonnenmacher
Free Projects				
Novel searches for dark matter and the origin of neutrino mass at the ATLAS experiment	PhD	ATLAS	Darren Price	Colton David Jonathan Rebecca
Precision tests of the EWK sector and direct searches for new physics with di-boson production	PhD	ATLAS	Alex Oh	
Precision measurements of weak boson fusion and weak boson scattering at ATLAS	PhD	ATLAS	Andy Pilkington/ Terry Wyatt	
Analysis of MicroBooNE data and Liquid Argon Detectors	PhD	MicroBooNE	Andrzej Szelc	