

Progress with Zeuthen Meeting Actions

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Laboratory



- Study of Photon collimators in undulator – Adriana, EPAC
 - ➔ Heat load, activation, vacuum level, materials, ...
- High power photon collimator needs to be studied and engineered
 - ➔ Report from Lei on heat loading, activation (next meeting)
- Positron collimation – design documented, needs updating as source evolves

- Generate beam test plan – Jim (next meeting)
- Horizontal magnet measurements required at some stage
- Electron beam tests required at some stage
- Modules need to be engineered for large scale production and operation
- Intermodule connections need engineering
- “Real” Undulator spectrums required for modelling of source – Duncan (next meeting)
- Write a Report on vertical test results – Nick/Duncan (next meeting)
- Store cryomodule safely so can be powered at a later date – Jim
- Alignment requirements justified/jitter studies/impact on polarisation

- Complete Eddy current tests at Daresbury – Ian/Leo Nov 08 (store properly afterwards!)
- Generate simulations to compare with experimental results – Jeff / RAL? Nov 08
- Pressure shock wave analysis – Stephan (next meeting) and numerical modelling – Tom (later)
- Guarding thickness verification – Tom (now)
- Ensure consistency between ANL/DESY simulations – Wei/Andriy (next meeting)
 - ➔ Energy compression before DR
- Lifetime studies of target (LLNL)
- Engineered solution, including prototype tests – water, vacuum, ...
- Alternative liquid metal (BINP/KEK tests) – Junji
- Where are ferrofluidic seals used – Ian (next meeting)

- Continue DR stacking studies and work with DR group to ensure optimum solution - Frank
- cavity stability tests (LAL/KEK) - Omori
- Laser demonstration – Fabian Zomer, Vitaly
- ATF demo – Omori
- 2010 demo of high gamma flux at ATF

- Write brief report justifying need for 5Hz positron spin flipping at some point and ability to reverse – Sabine (next meeting)
- [Scheme to destroy polarisation in DR completely – Des Barber]
- Low energy polarimeter – check impact of foil temperature on performance & background studies – Ralph (next meeting)
- Close contact with IP group polarimeter
- Ensure spin survives to DR
- Electron spin also within undulator – Des early 09
- Close contact with simulations group – spin track to IP
- Optimise spin rotator design (5GeV/125MeV?)

- Preliminary use of detailed target model in Fluka – Luis/Lei/Andriy (next meeting)
- Collimator in RH (next mtg)
- Activation of water - Luis/Lei/Andriy (next mtg)
- Shielding thickness around target etc – Andriy (next mtg)
- RH scenarios refined
 - ➔ Changeover times (requirement ties in with lifetime of kit in RH)
 - ➔ Replacement of pillow seals?
- Auxiliary source (needs RH as well) – KEKB?
- Pillow seals need R&D
- Need engineered design compatible with source layout (remove inconsistencies!)
- If yield increases then RH not needed (limited only?)

- Write-up undulator emittance effect – Wei (next meeting)
- Benchmark G4 polarisation/yield against other codes – Andriy/Andreas (next meeting)
- Study activation of linac after target, copper vs aluminium – Andriy (next meeting)
- Re-evaluate undulator K if target/OMD changes (Wei)
- Ongoing yield/polarisation evaluation with source design evolution (Wei)

- Li Lens
 - Evaluate level of radiation damage in window & implications for lifetime
 - Stress-strain in window
 - Thermal cycling fatigue
 - Cavitation wear on windows
 - Proton beam tests?
 - Contact experienced Li lens experts to discuss this idea (Jerry Dugan?) – Marc to provide names
 - KEKB BN window tests (liquid lead target)
- Flux Concentrator
 - Need feasible design

- Begin “system integration” engineering – Norbert/Jim/John
- Define new specification for Auxiliary positron source – Jim
- Understand timing issues for ILC, work with DR group to look at options – Jim/Andy W
- Establish link with KEKB high intensity conventional source project – Jim/Kamitani