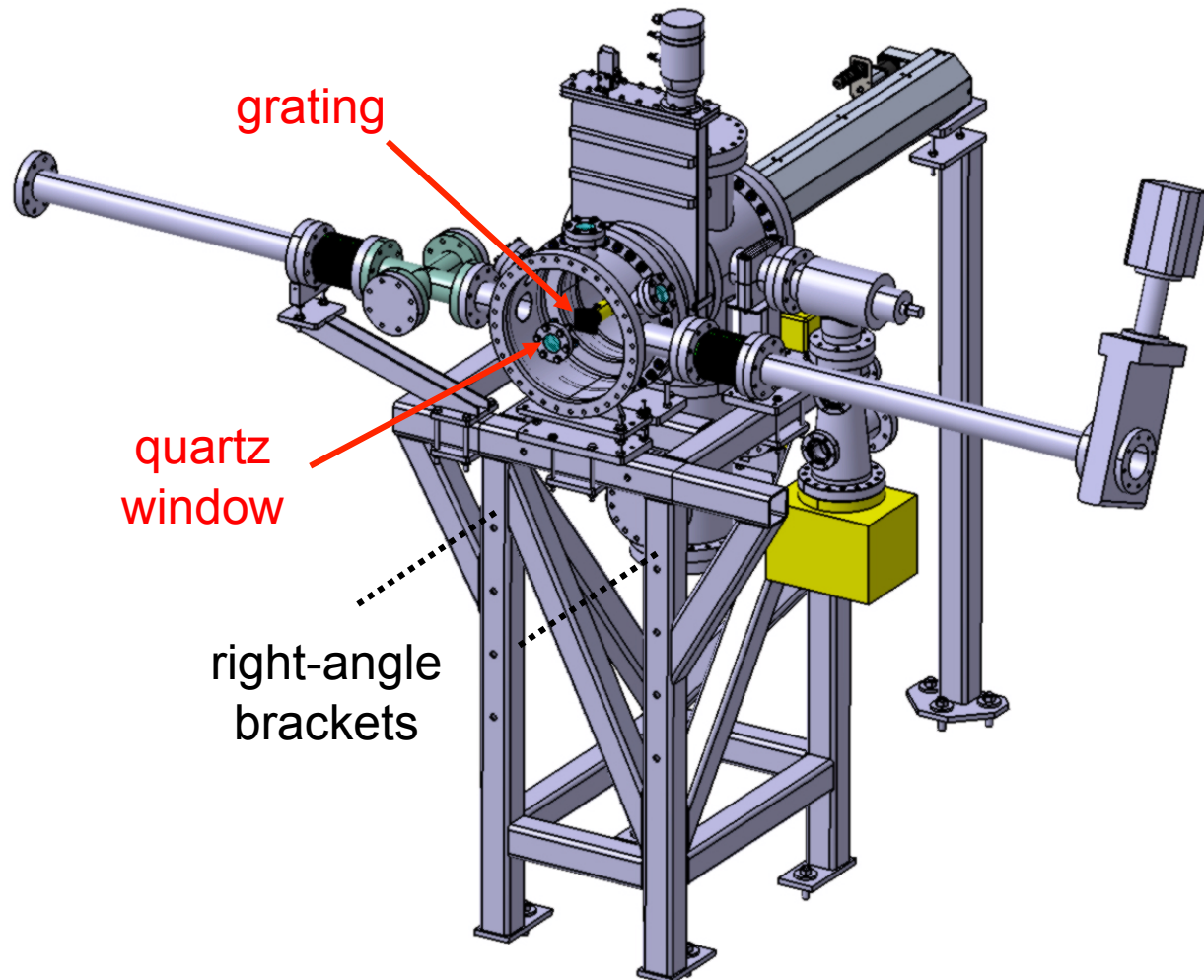


Optics for SPESO

SP-ANR meeting, 15 March 2013

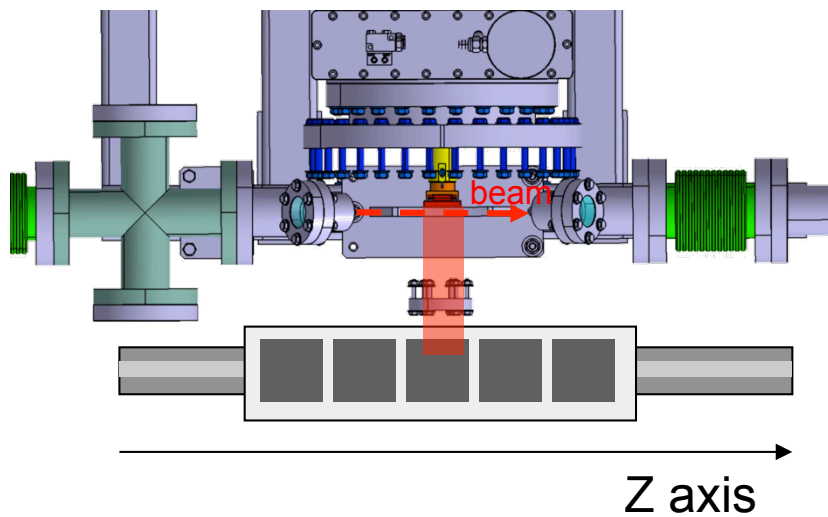
SPESO: initial optical setup

- Side view of vacuum chambers



SPESO: initial optical setup

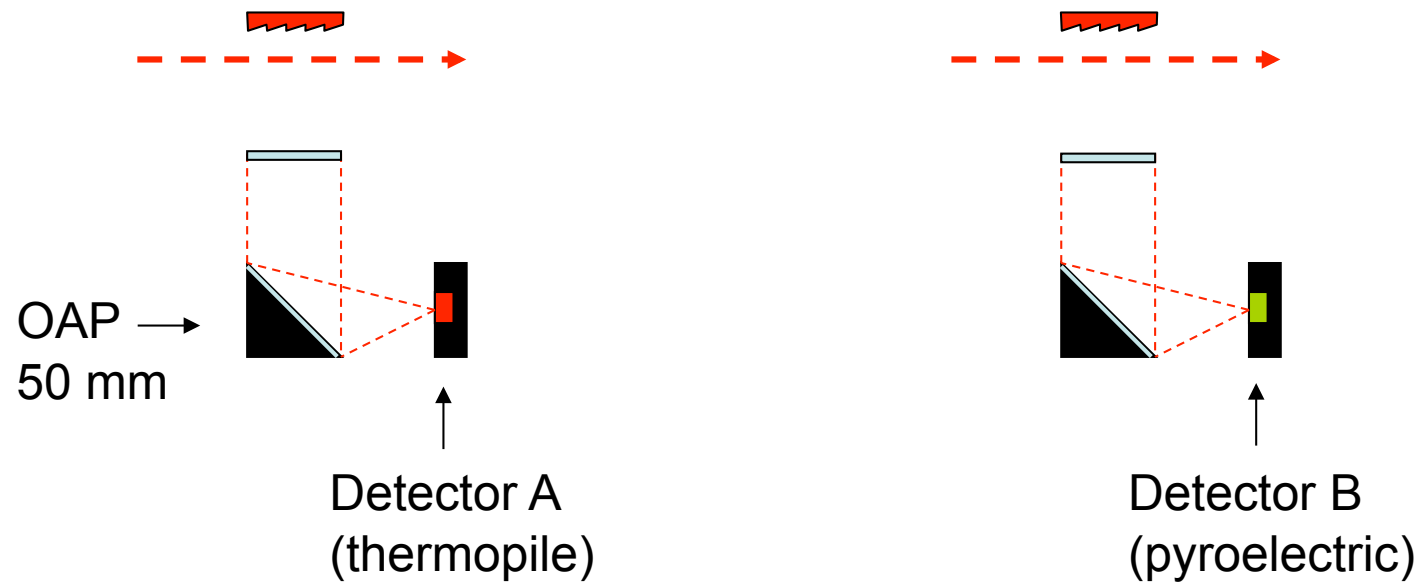
- Top view



- Quartz window $\text{\O}50\text{mm}$, limited angle of view
- Several optical systems on a linear translation stage

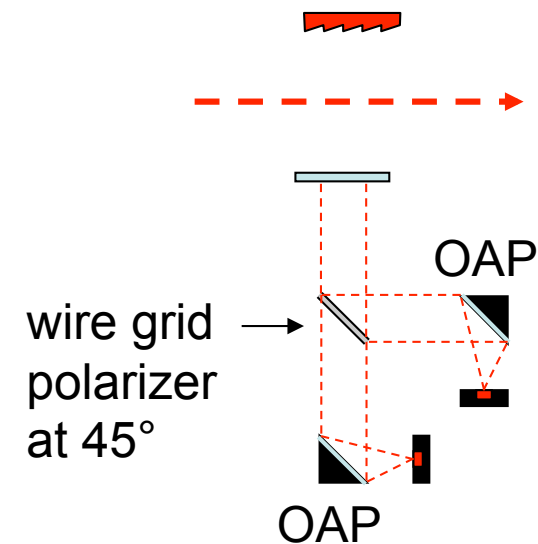
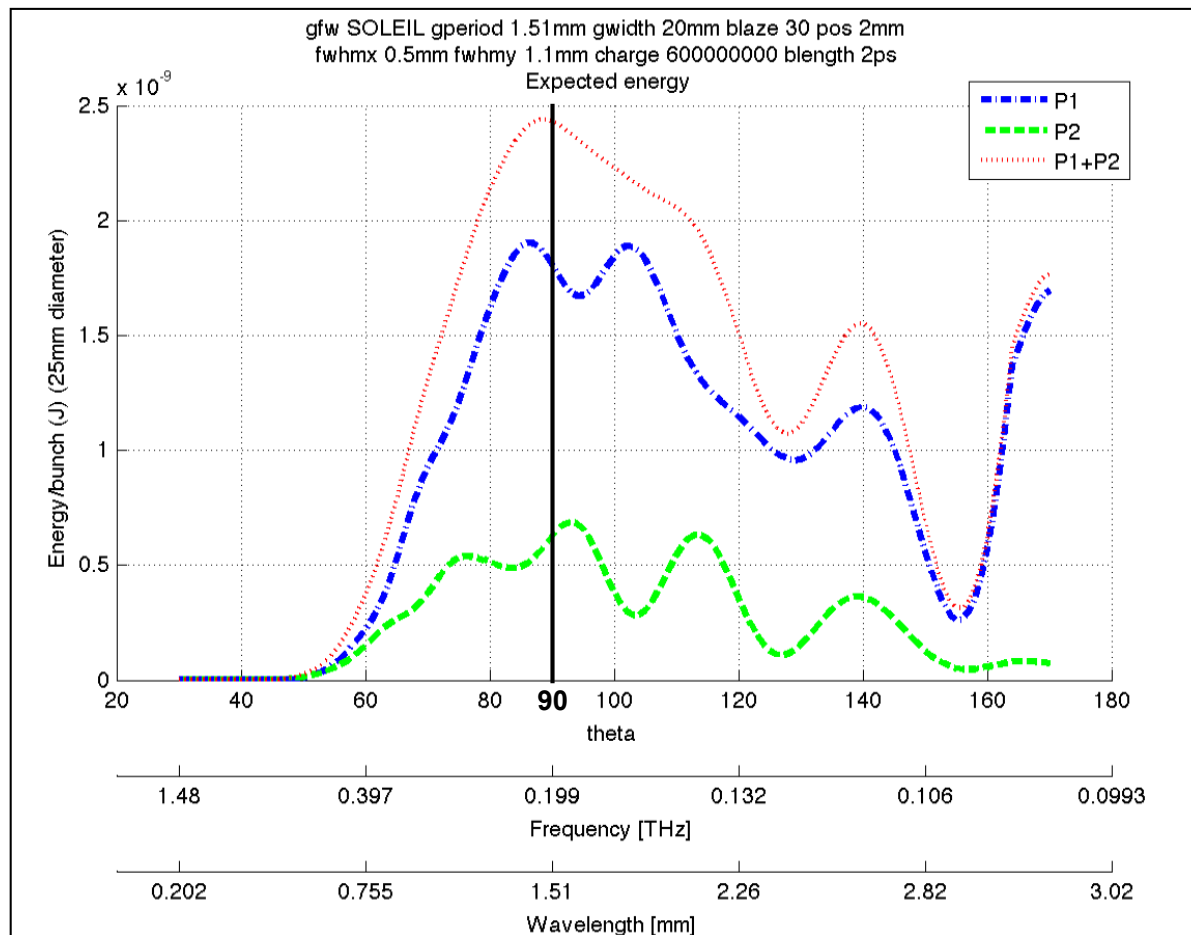
SPESO: initial optical setup

- **Task 1:** detection of SP signal
- 2 different detector types to ensure a wide sensitivity range



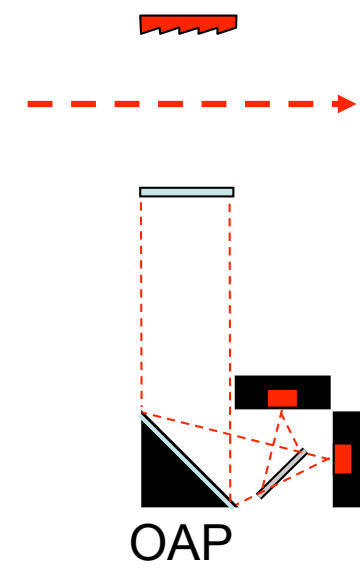
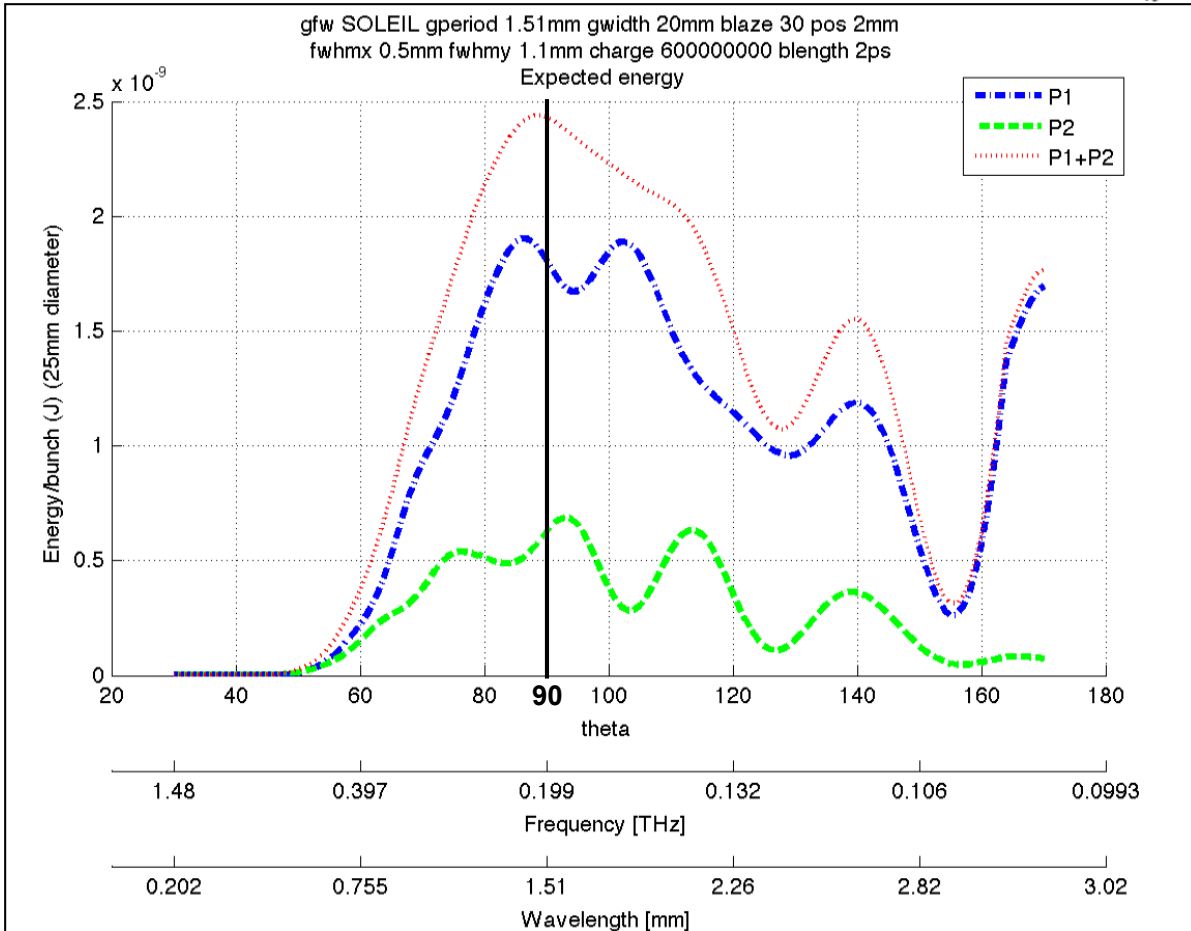
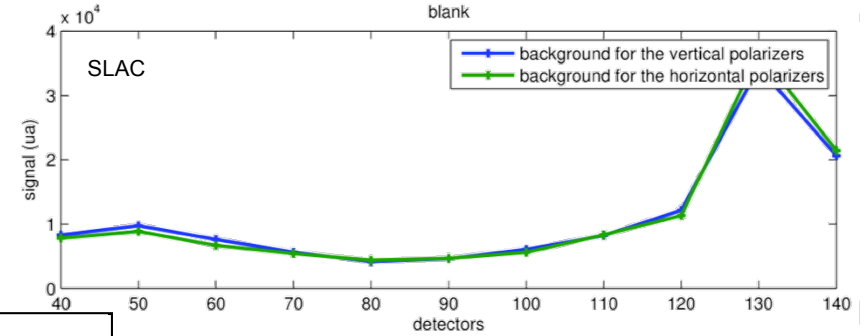
SPESO: initial optical setup

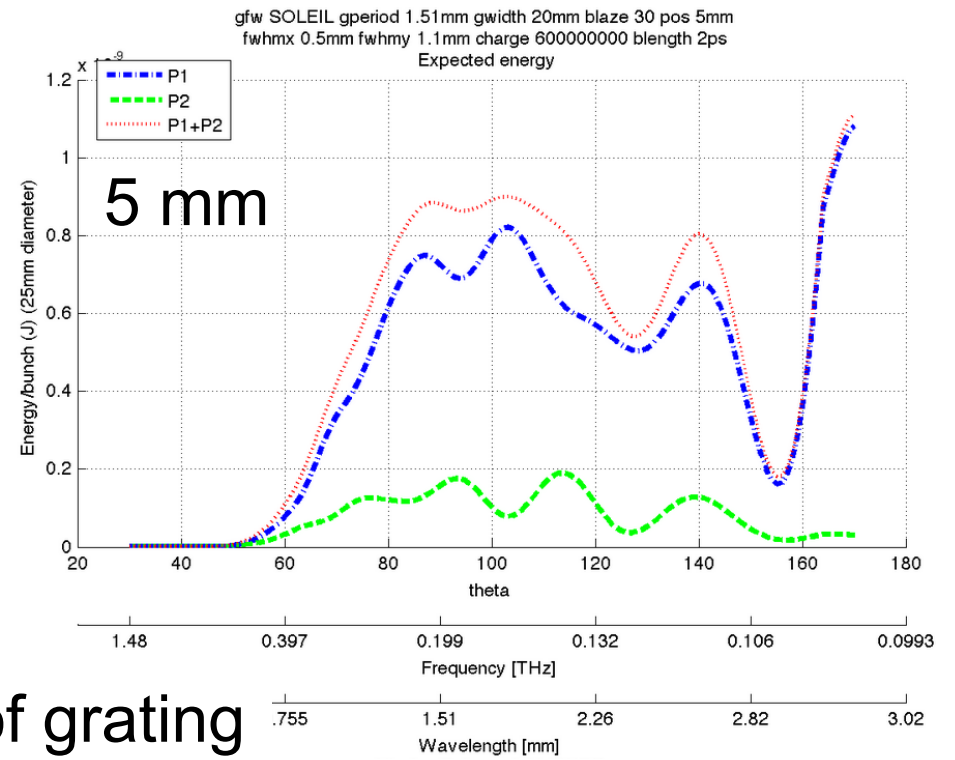
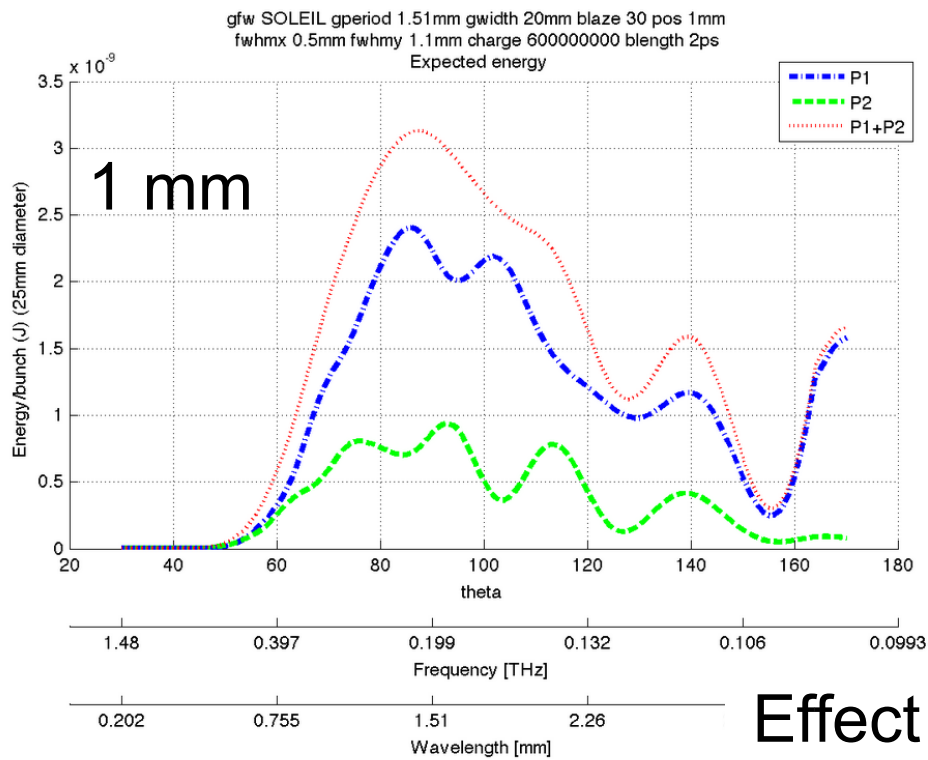
- **Task 2: polarisation study**



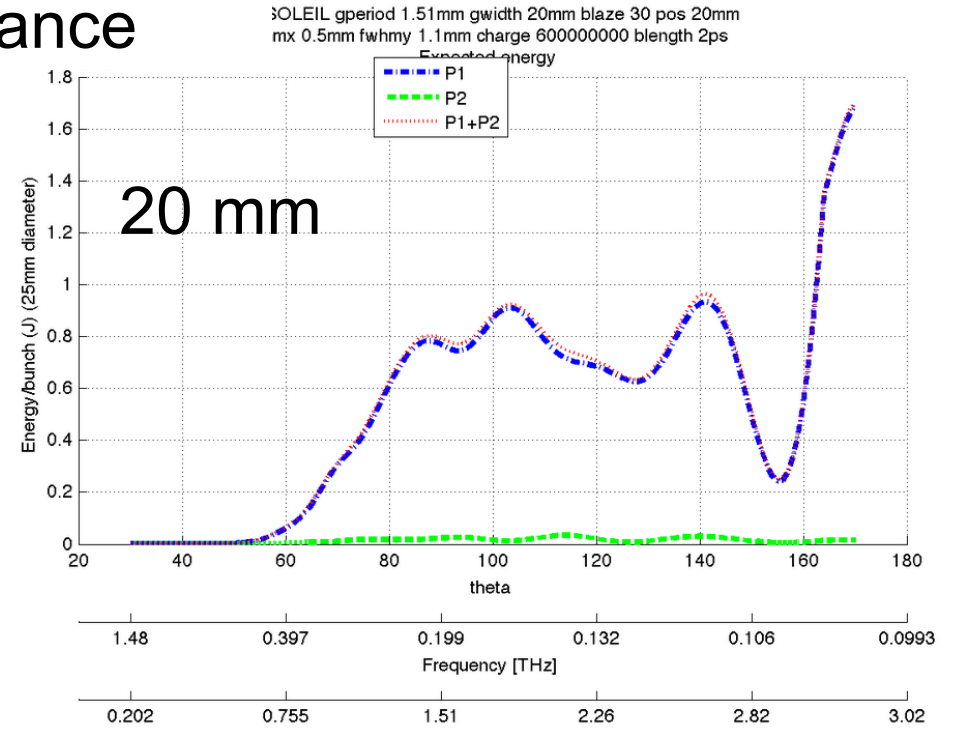
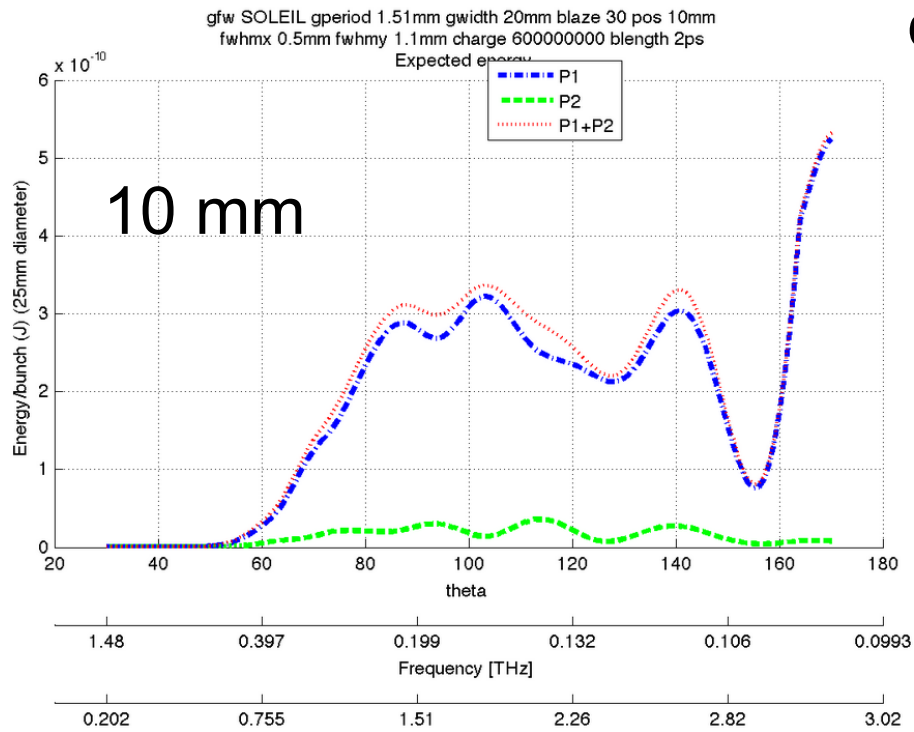
SPESO: initial optical setup

- **Task 2: polarisation study**



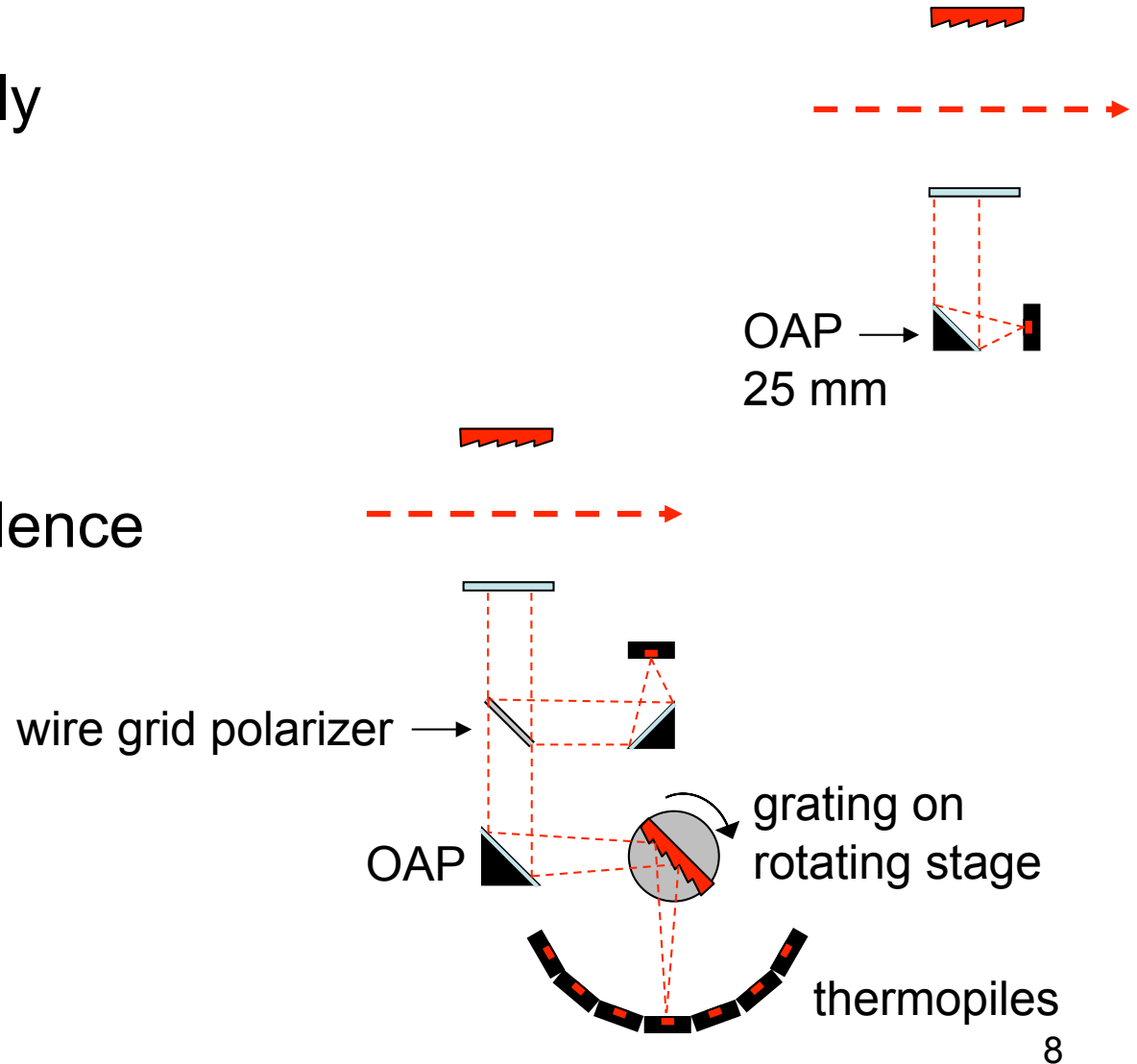


Effect of grating distance

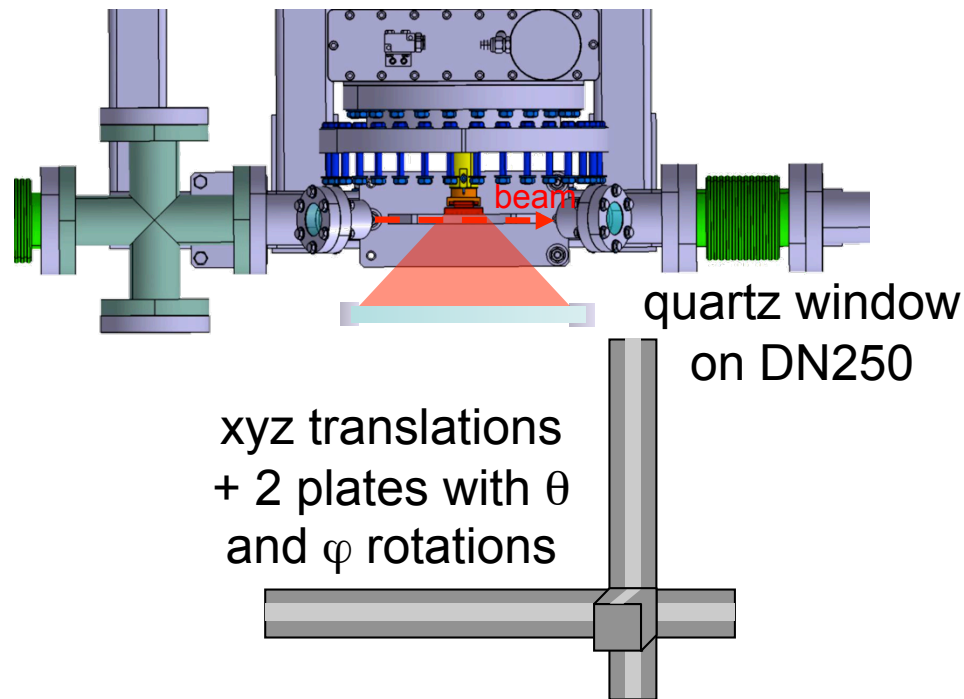


SPESO: initial optical setup

- **Task 3:** first spatially resolved study
- **Other idea:** test of wavelength dependence

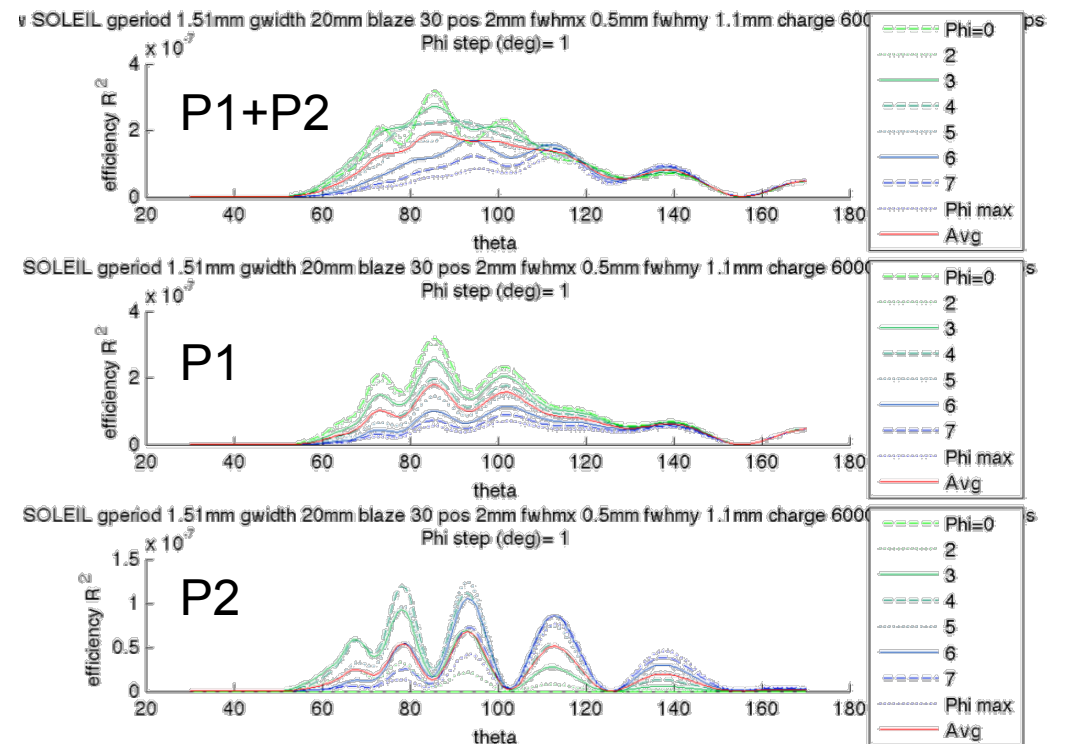


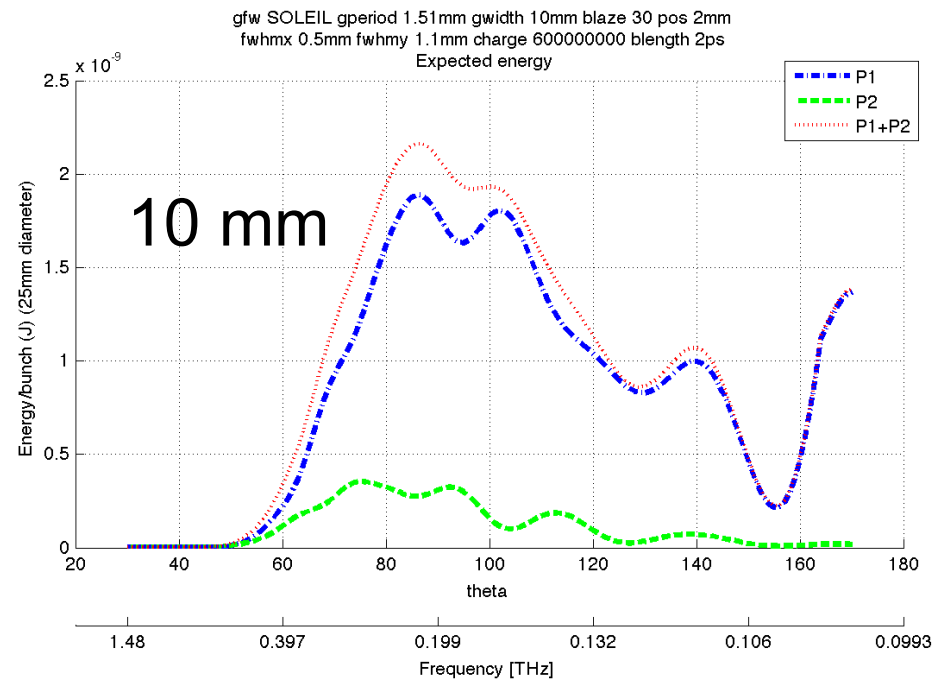
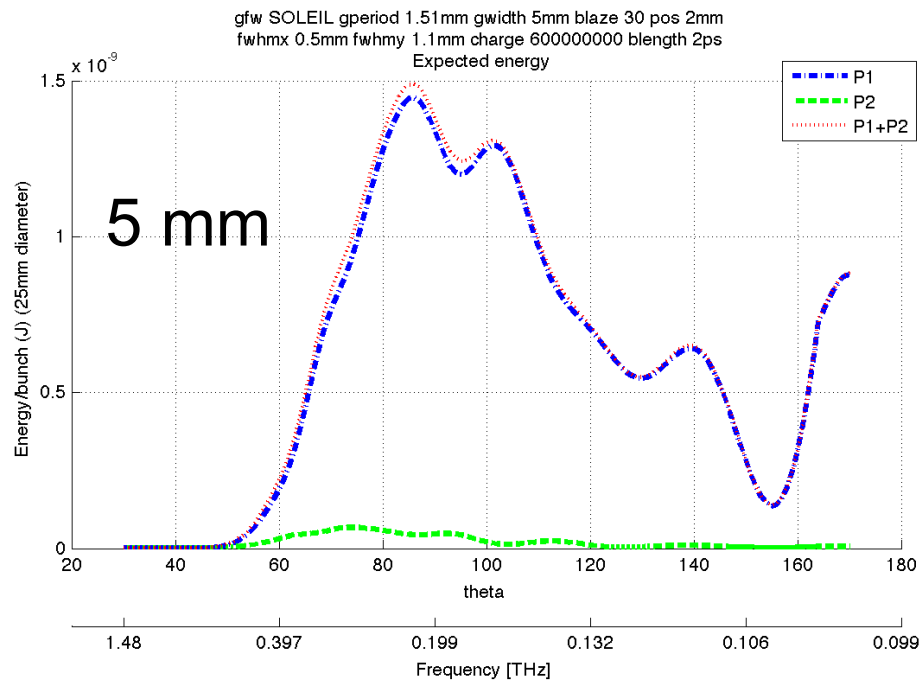
Use of 7-axes robot



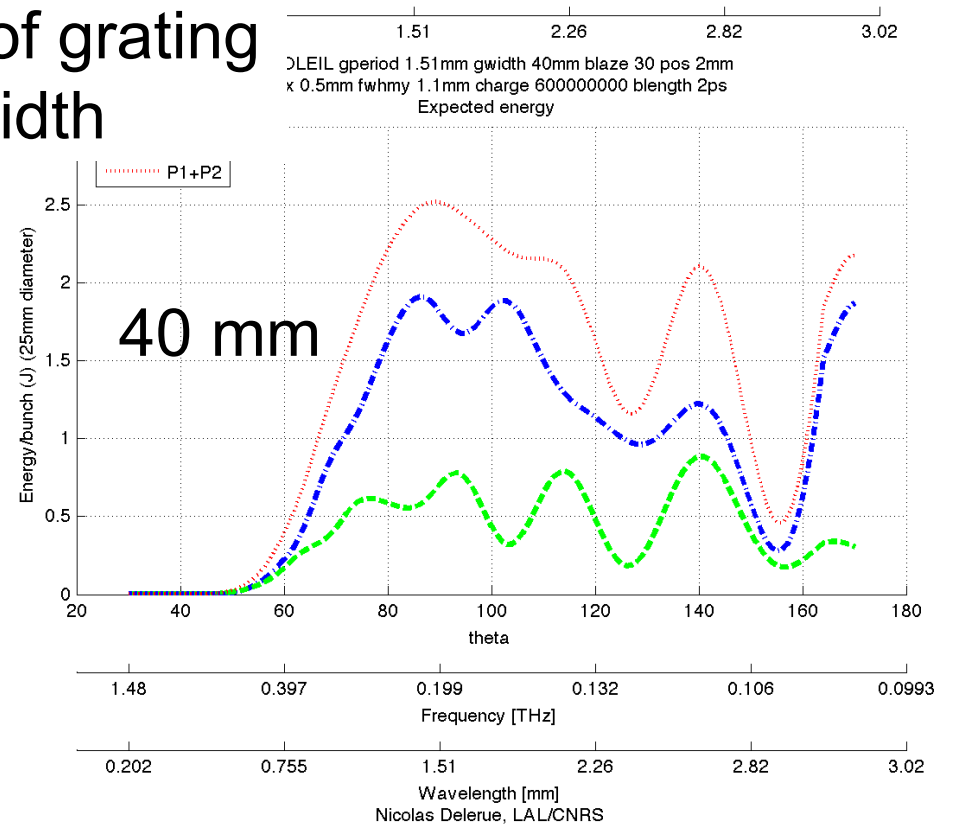
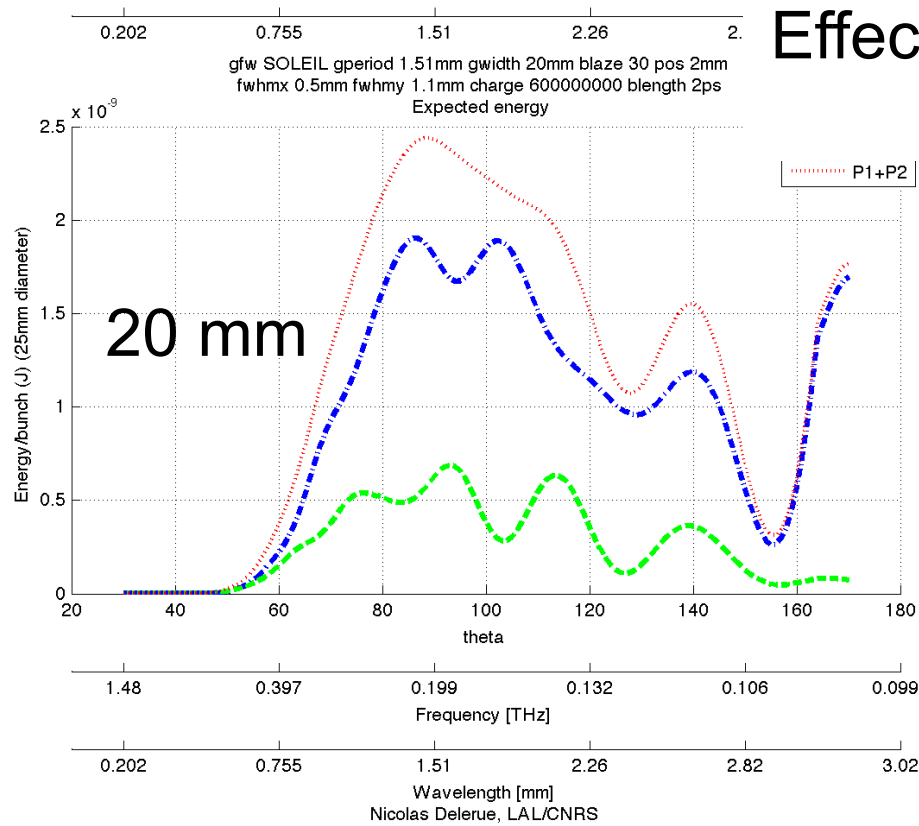
- Different layouts considered (PUMA)

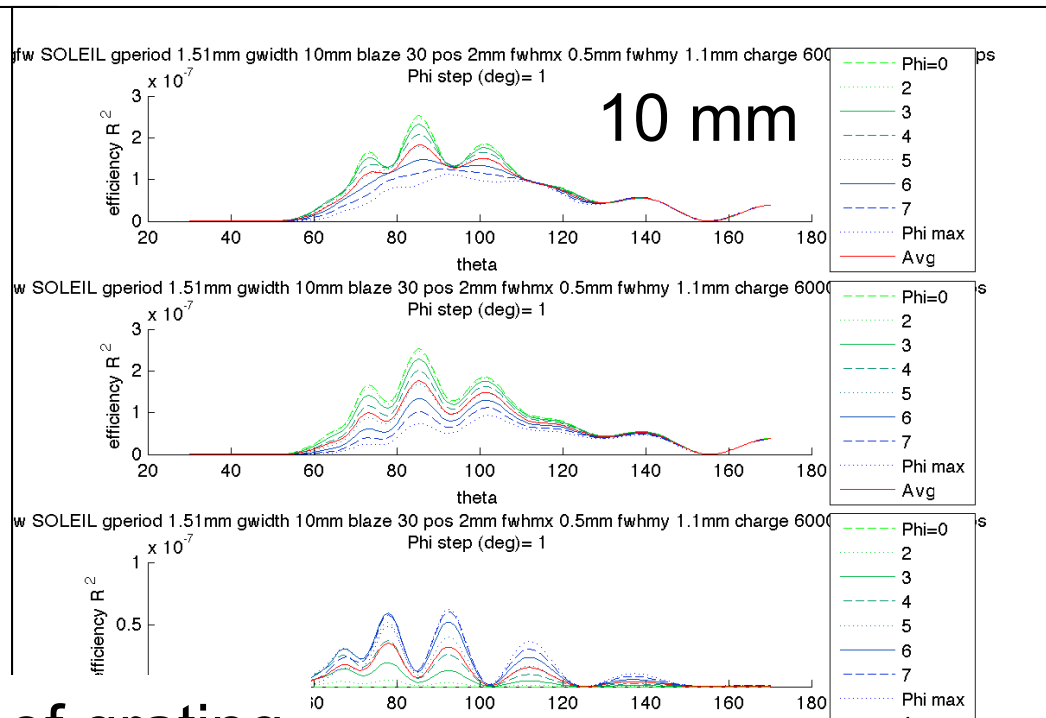
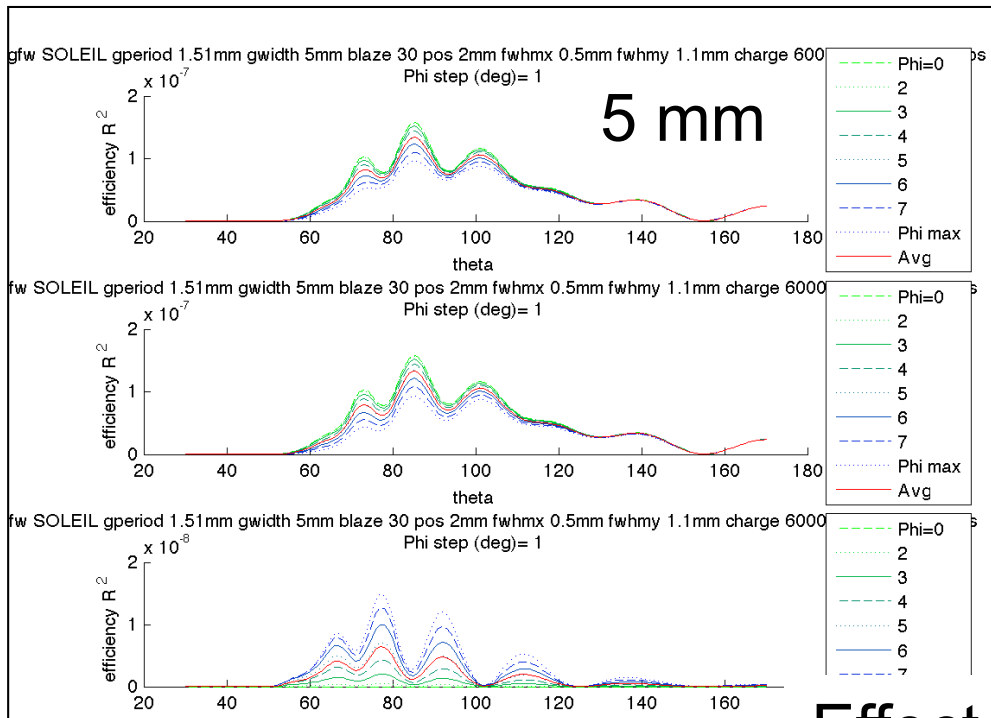
- Aim: 3D profile of SP radiation



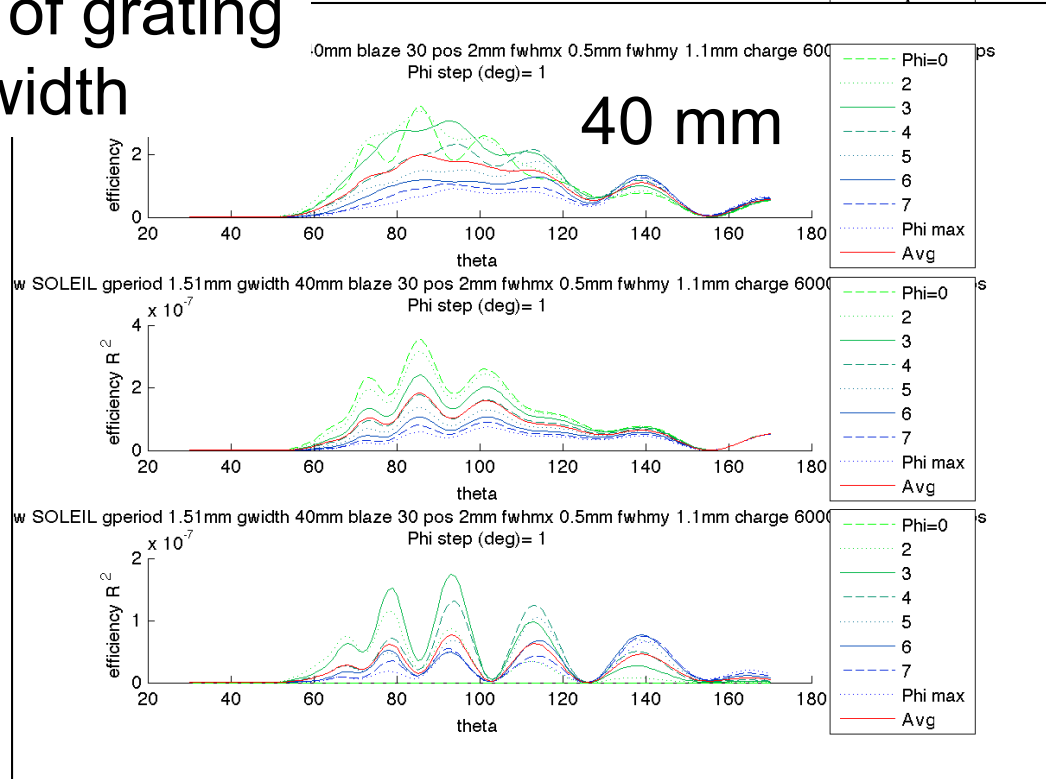
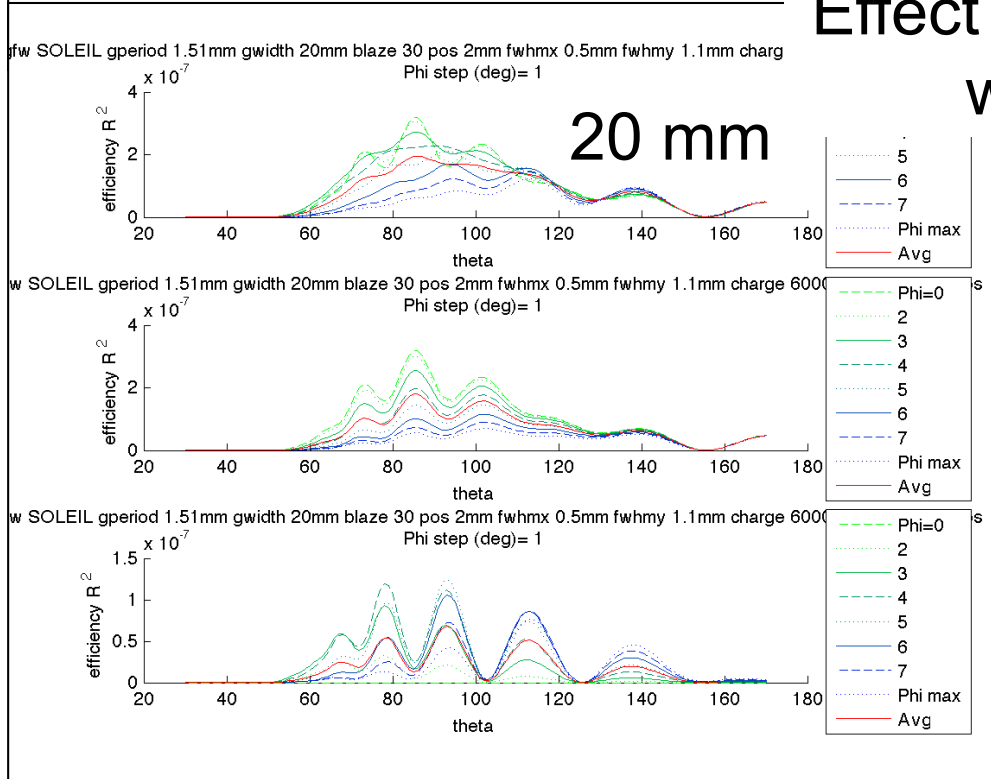


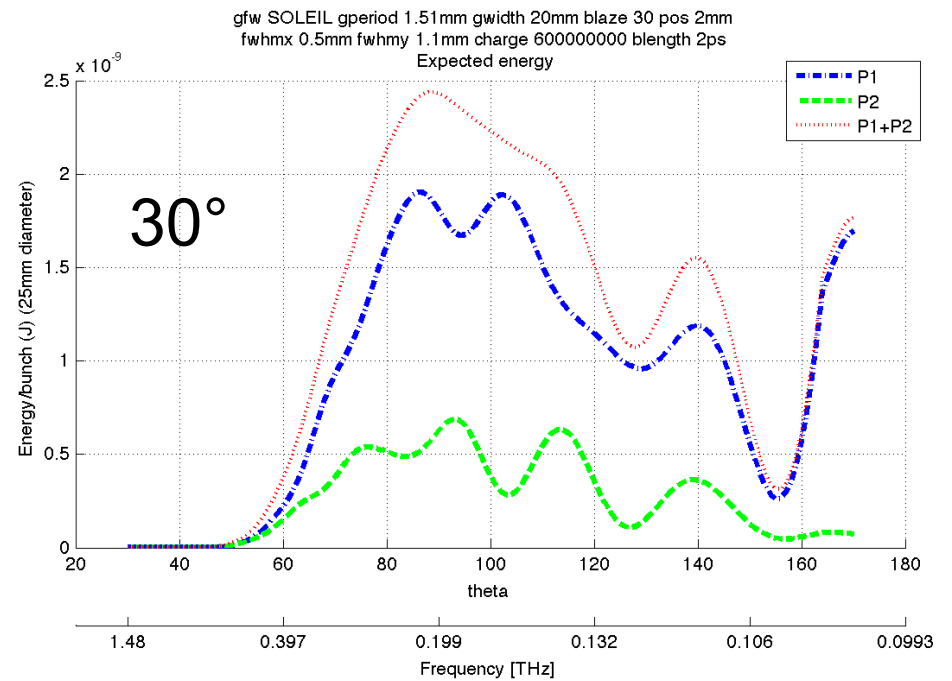
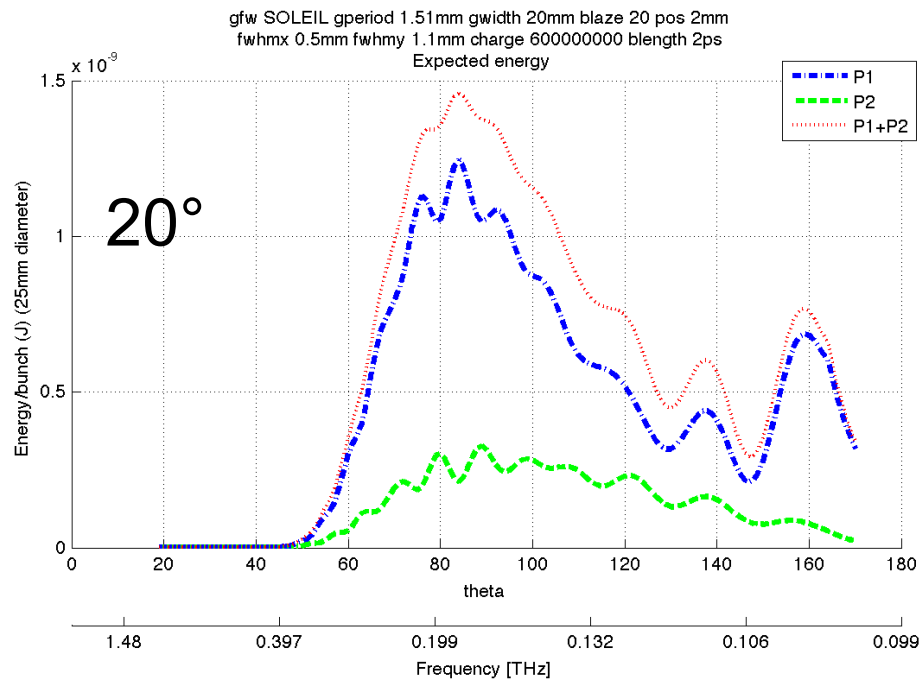
Effect of grating width



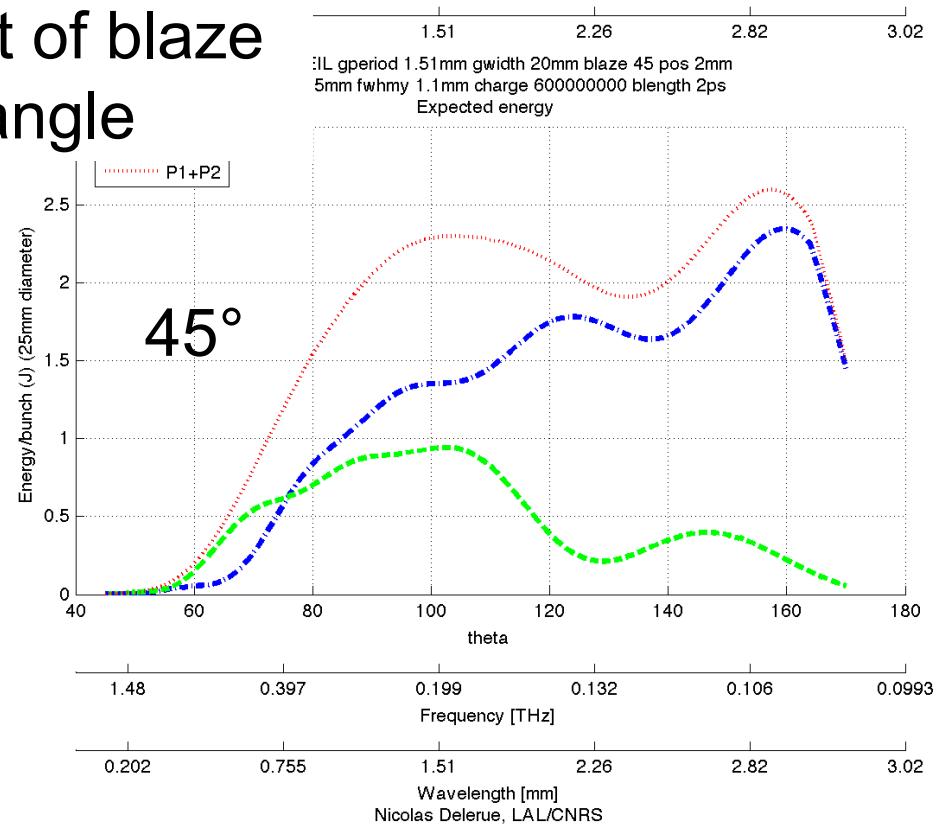
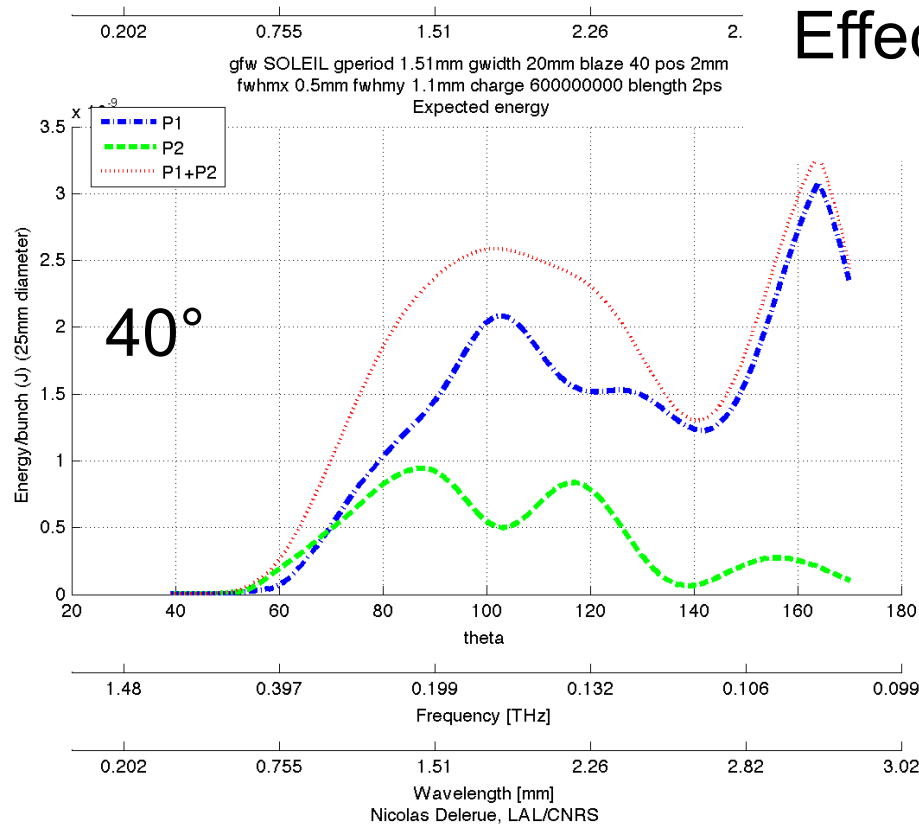


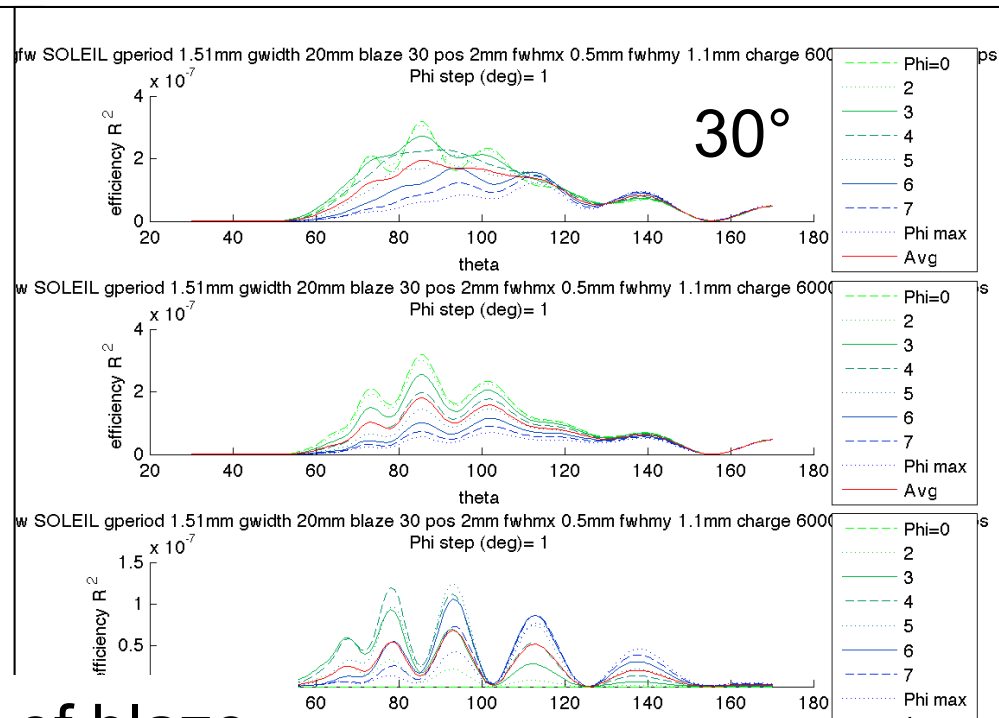
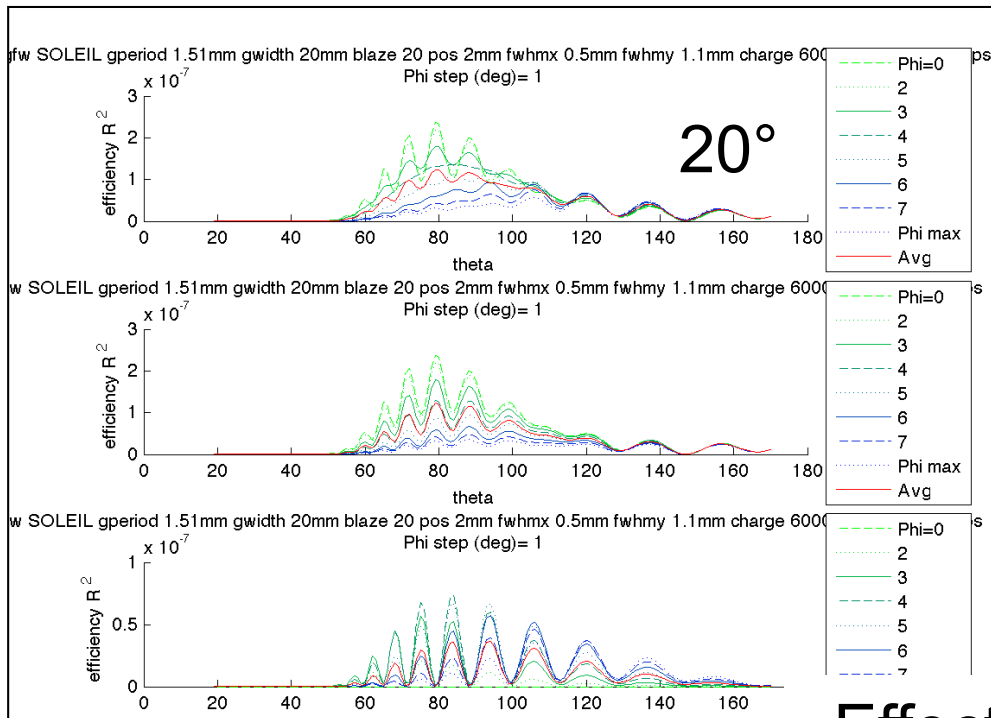
Effect of grating width



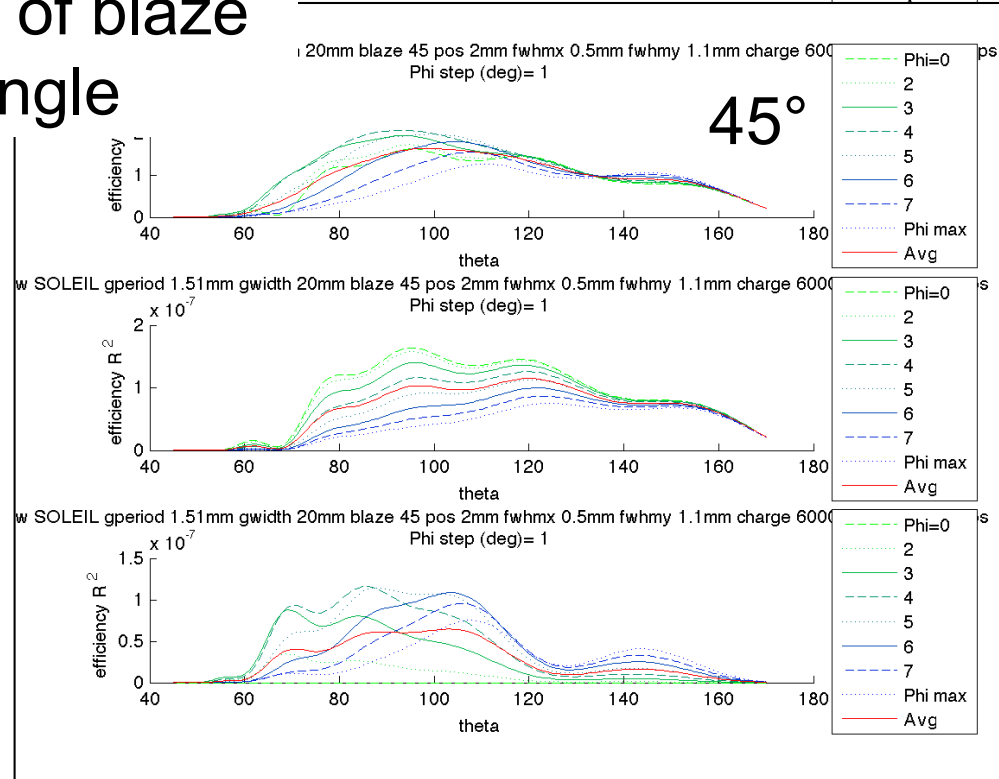
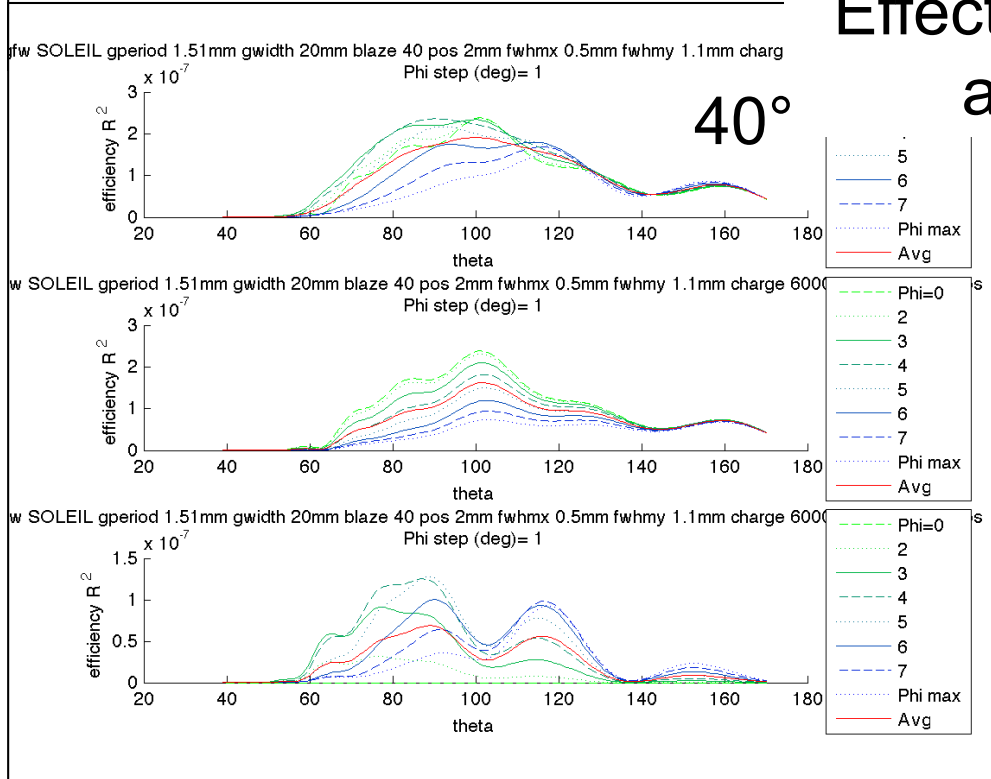


Effect of blaze angle





Effect of blaze angle



List of gratings

- Macor, 1.5 pitch, 30 deg Blaze, 40mm long x 20mm wide
- Aluminium, 1.5 pitch, 10,20,30,40 and 45 Deg Blaze, 40mm long x 20mm wide
- Aluminium, 1.5 pitch, 30 Deg Blaze, 40mm long x 5mm, 10mm,30mm,40mm wide