* Spektren zeigen, aber muss nicht so viel in Detail gehen.
  + Es geht darum, grundlegende Sachen zu zeigen.
  + Vorheizen diskutieren
* Unsicherheit für Auflösung
  + Von T des Plasmas, Dopplerverbreiterung
  + statistischer Fehler
  + Für Kante, width of edge
    - Ist oberer Wert für Auflösung, weil scharfe Kante angenommen
* Anderer Begriff für Auflösung, weil hier haben wir die Quellgröße als Einfluss
  + Können versuchen, die Quellgröße mit knife edge zu bestimmen, dann den Einfluss davon rausfalten.
* Laser energie durch photonenenergie bei einer bekannten Linie (vermutlich He alpha von Al) gibt konversionseffizienz. Das wirkt als sanity check statt Bremsstrahlung von gold zu nehmen. Philipp schickt ein Paper dafür.
* Verhältnis Lyman und He alpha
* Sanity check mit konversionseffizienz eher bei X-ray emission von Plasma
* Das mit knife edge bei Resolution
  + Bei einleitugn für resolution sagen, haben gesehen dass Quellgröße eine Rolle spielt, also zuerst quellgröße bestimmen
* Fokus der Arbeit
  + Auf Spektrometer, deshalb Plasma sachen eher kurz
  + Kann Ausblick geben über die Spektrometer und Backlighter
    - In Discussion section simply give the results and what we noticed
    - Discuss my opinion on the spectrometers
      * Philipp suggests unbent KAP double channel. Is suitable as bending seems to make much more problems than literature suggests.

**Need from Philipp:**

* ~~Conversion efficiency results interpretation~~
  + ~~Ask paul if Größenordnung is reasonable~~
* ~~Specs for KAP~~
* ~~Help with source size determination~~
  + ~~vertical line out of approx. linear edge in KAP Bild. Then fit err function to it 🡪 get sigma 🡪 get gaus of source, then change to micron~~
* ~~Look at FSSR relative reflectivity together~~
* Source size, Doppler broadening, and spectrometer resolution entfalten?
* ~~Help with making picture of experimental setup in Inventor~~
* ~~Still shorten mechanical design of spectrometers? At the moment it’s already rather short.~~
* ~~I think the efficiency argument doesn’t hold up. Same angle area covers smaller area on crystal. Higher collection efficiency of spherically curved crystal should be from collecting rays from different source points to same point on detector in spectral direction~~
  + ~~It could be that these effects largely balance themselves out in most cases. Higher intensity compared to flat crystal should come from imaging in vertical direction most of all.~~
  + ~~Arguably von hamos should have better intensity than FSSR, at the cost of worse resolution and smaller E-range, especially for a small source size~~
  + ~~SNR better for FSSR due to spectral focusing~~

**New questions:**

* Take a look at source size together. Surprisingly the phase plate didn’t seem to have much effect on it
* Help with FLYCHK for Doppler broadening determination
* PHELIX data again, was deleted previously for some reason
* Why is source broadening for single crystal only take into account two directions? Does the out of plane of chip direction really play a role?

**My notes:**

* Events 1 to 8 unusable. 9 has potential but KAP bad. 10 possible, but has same problem as 9 in that lower order peaks being suppressed. 12 to 14 have slit, so very difficult to extract anything meaningful. 15 not possible due to no clear common peak (problems with KAP background). 36 is way too weak.
* 37 possible, 41 is a candidate with good aligning. I think the main problem is higher order stuff, can try line at 1606.3
* For now just show Al shot (event 16)
* Only usable Al shot with FSSR is 16. Generally lower energy part of FSSR looks bad
  + CE from this shot 🡪 1 16 FSSR 1598.4 0.04452811034450615
    - This is for normal handling of FSSR image
    - for summing we get
      * Event Spec E of line [eV] CE [-]

0 16 FSSR 1598.2415511383454 0.0021321981260396293

1 16 KAP 1598.402 0.024423841808532194

* + Ratio can try from rare earth shots
    - Dy possible, Sm possible for high E,
    - R\_int ratio results for event 16, He alpha

Experimental R\_int ratio (FSSR/KAP): 0.05

Theoretical R\_int ratio (FSSR/KAP): 0.67

* for higher E line
* Experimental R\_int ratio (FSSR/KAP): 0.018

Theoretical R\_int ratio (FSSR/KAP): 0.67

* Maybe an issue with taking a constant background for one spectrometer, but not for other?
* Could fit the data and try to get ratio like that. The max of the peak looks promising, maybe integrating over the peak is playing a role, since the resolution is so different?