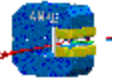


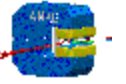
# ***Cell tests for ANKE***

Kirill Grigoriev, Frank Rathmann, Hellmut Seyfarth,  
Ralf Engels, Peter Kravtsov, Janos Sarkadi



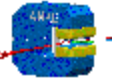
# ***Cell tests for ANKE:***

- ❖ **Main goals for the tests**
- ❖ Experimental setup
- ❖ Results of the tests
- ❖ Preparations for next tests
- ❖ Outlook



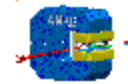
❖ *Main goals for the tests*

- First **real** measurements of COSY beam size at the ANKE target position.
- Determination of the preferred cell sizes for polarized storage cell gas target tests.
- And other small tasks...



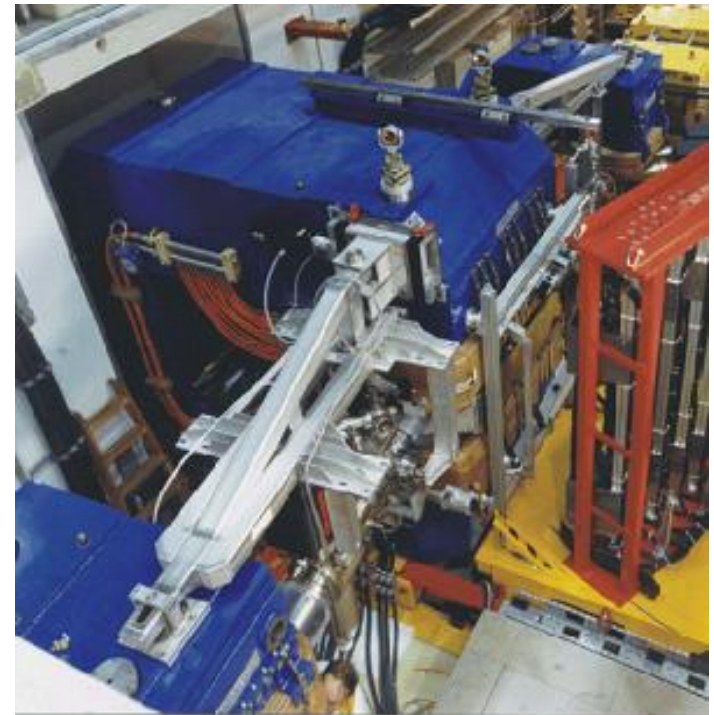
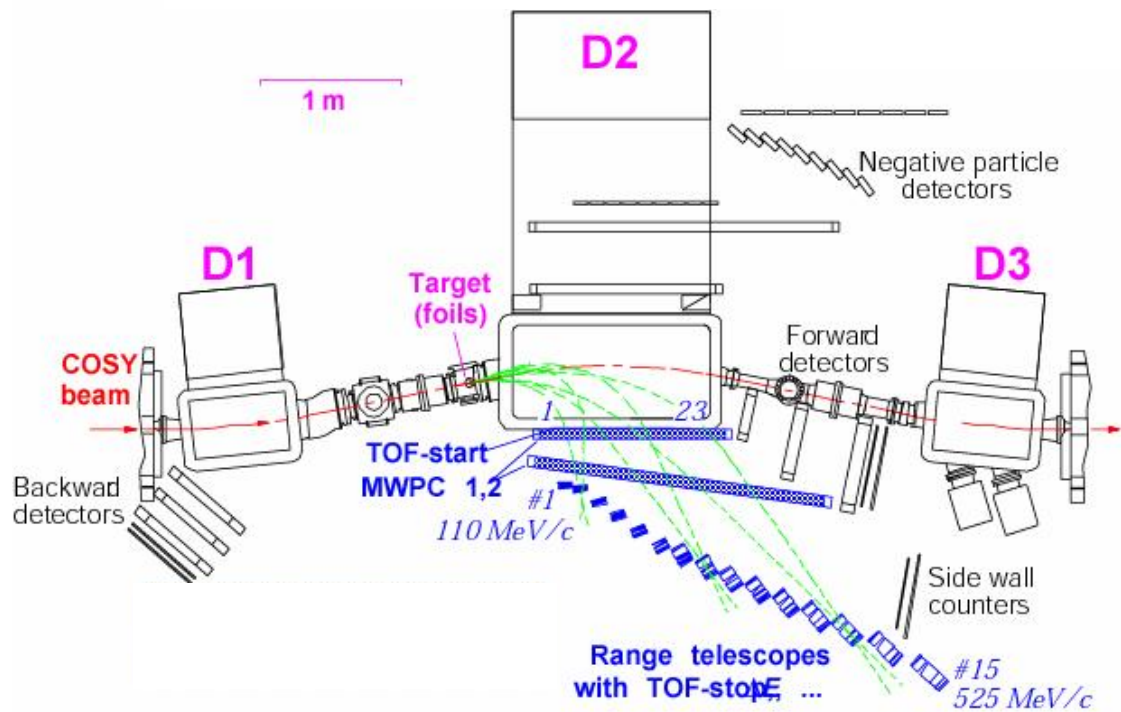
# ***Cell tests for ANKE:***

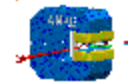
- ❖ **Main goals for the tests**
- ❖ **Experimental setup**
- ❖ Results of the tests
- ❖ Preparations for next tests
- ❖ Outlook



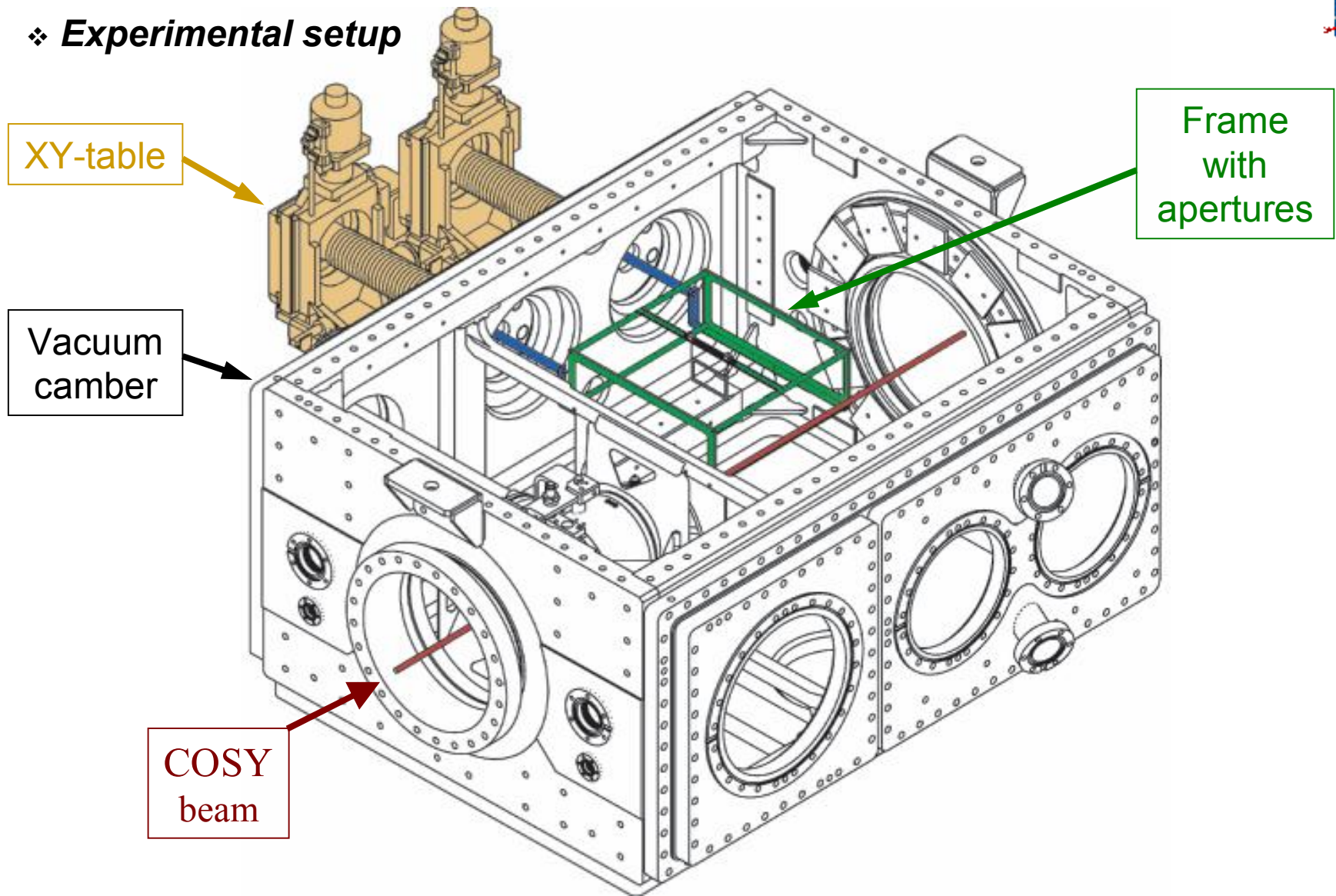
❖ *Experimental setup*

# Spectrometer ANKE

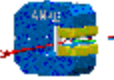




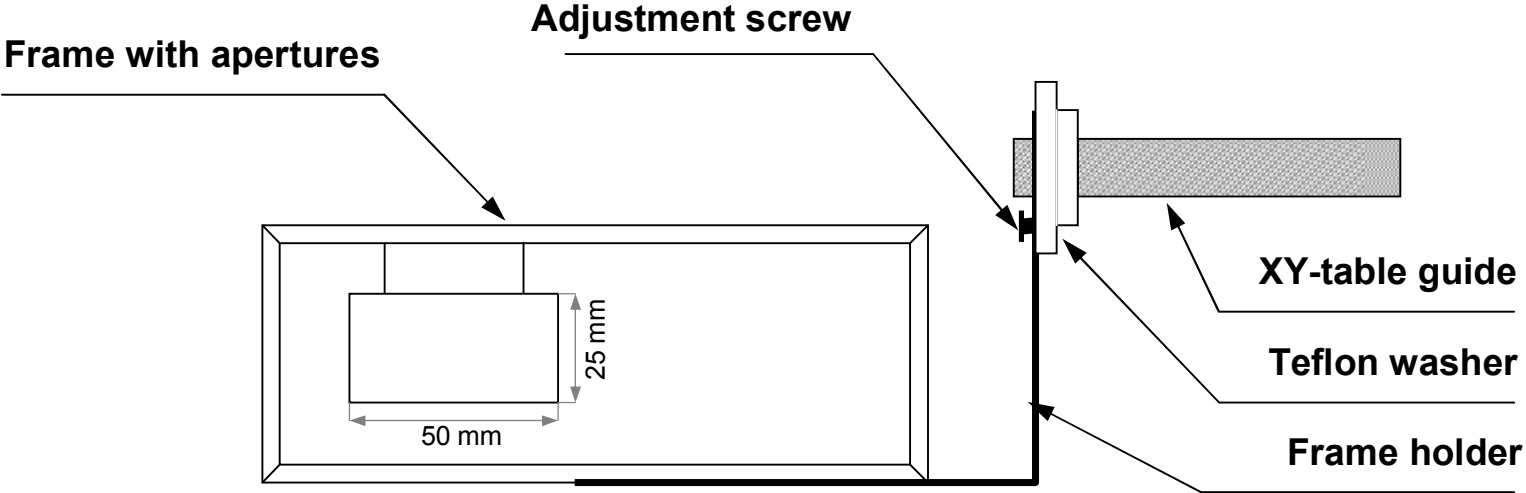
❖ *Experimental setup*



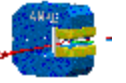
XY-table with the frame at ANKE



❖ *Experimental setup*



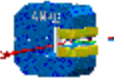
Adjustment of the frame position



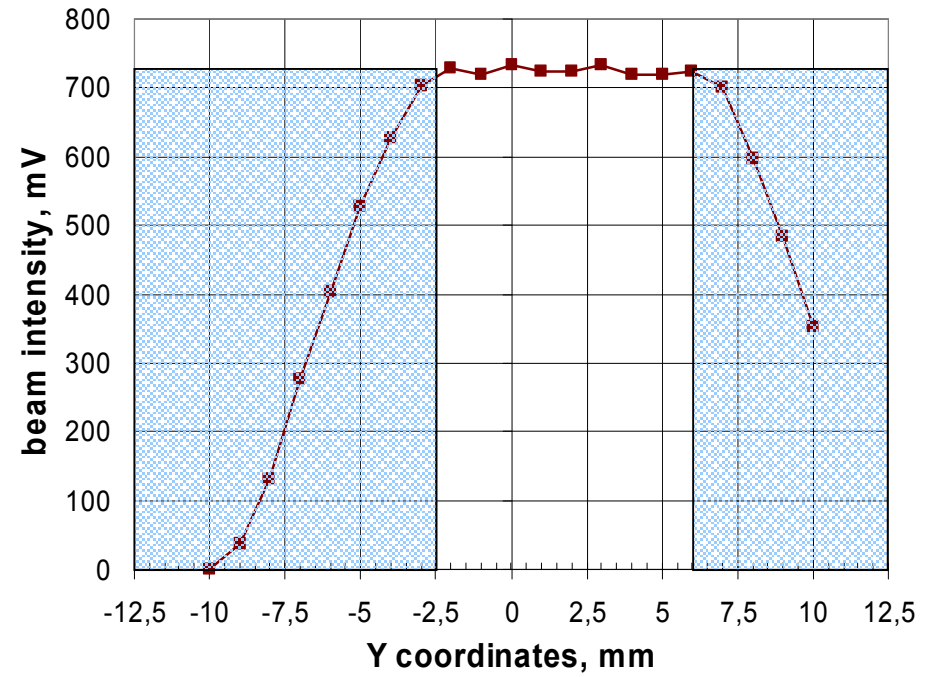
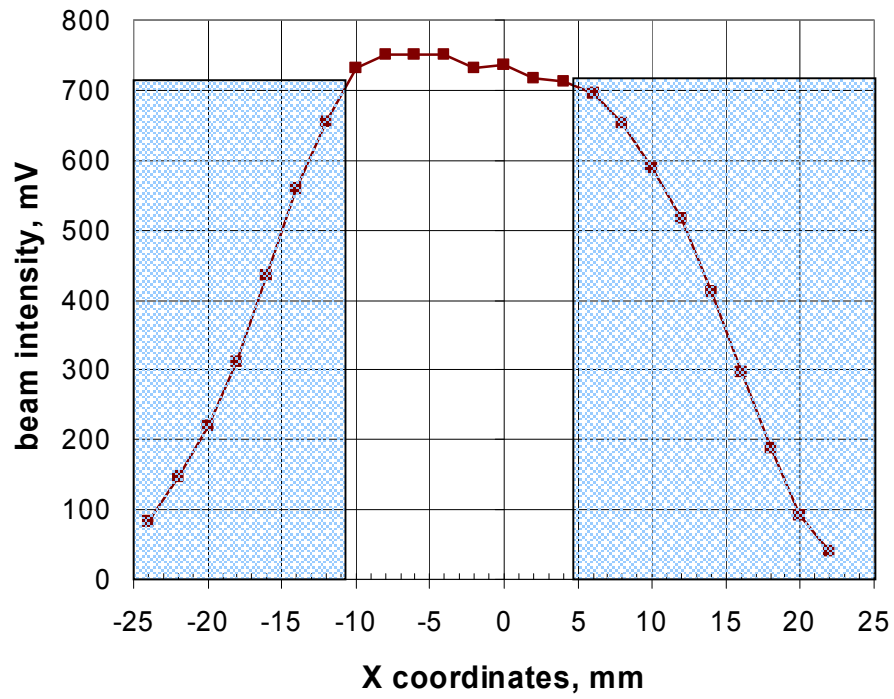
# ***Cell tests for ANKE:***

- ❖ **Main goals for the tests**
- ❖ **Experimental setup**
- ❖ **Results of the tests**
- ❖ Preparations for next tests
- ❖ Outlook

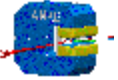




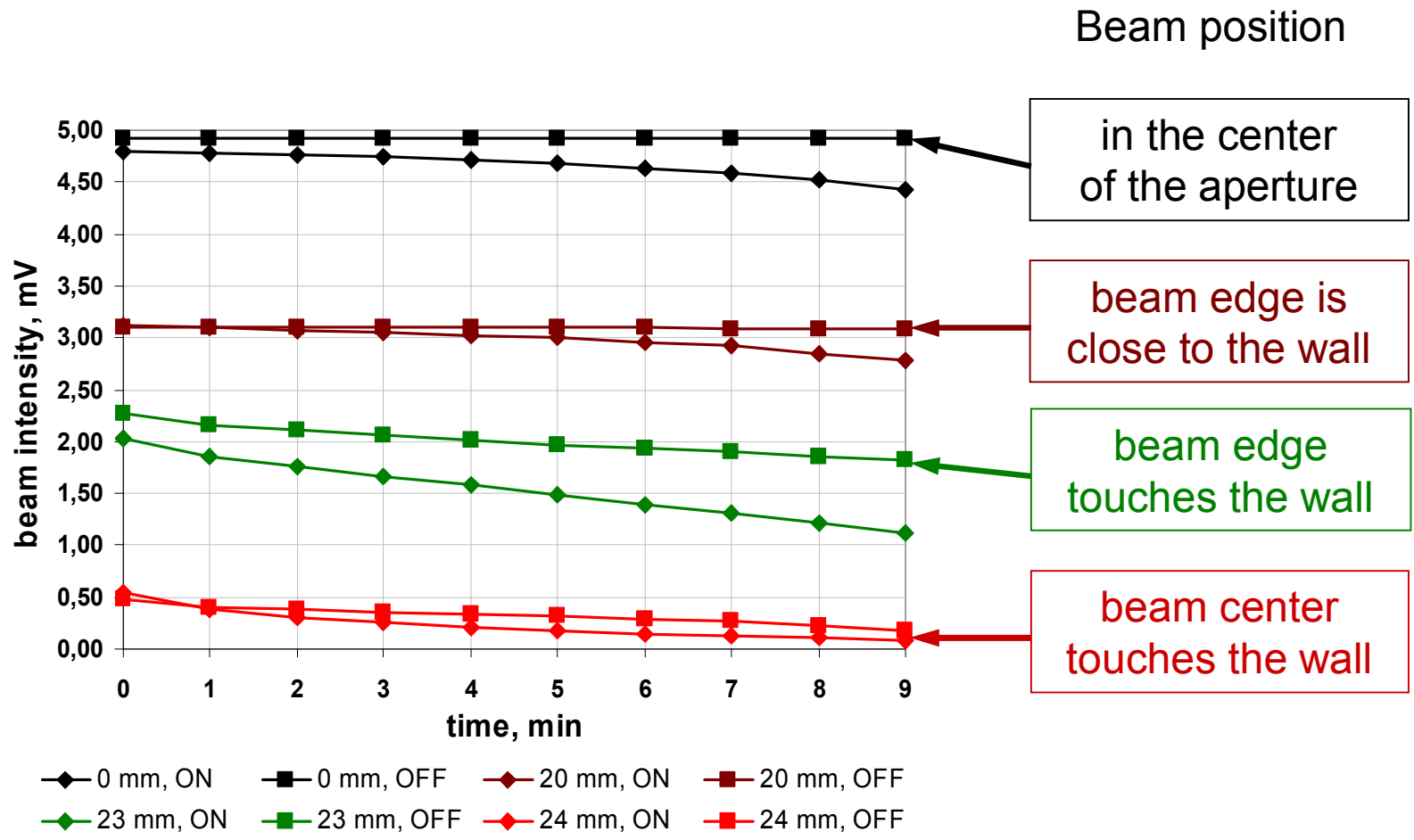
## ❖ Results of the tests



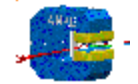
**Tests at injection**



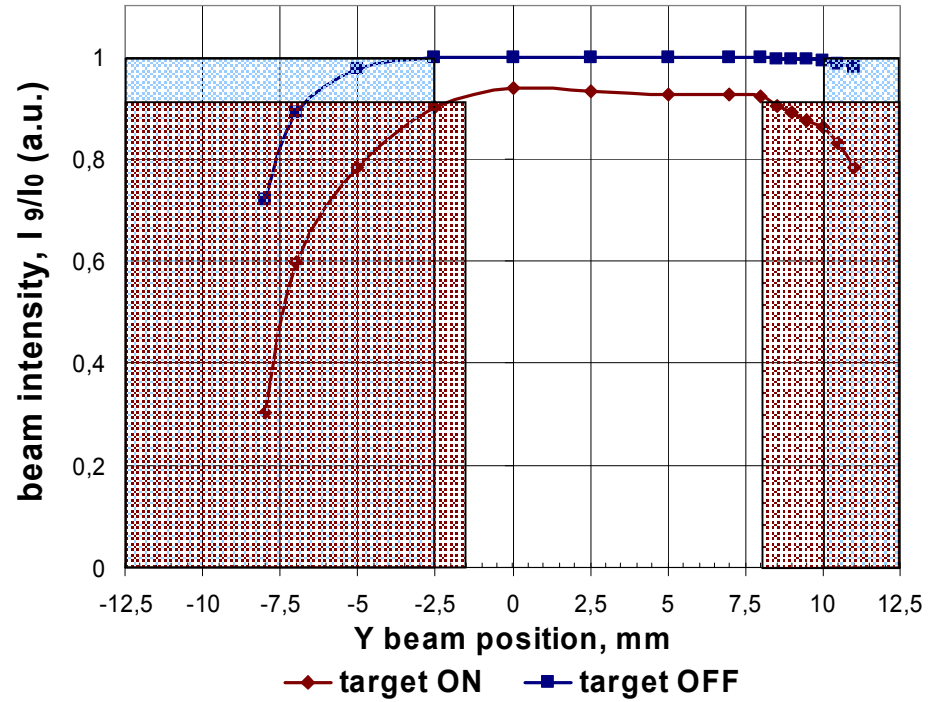
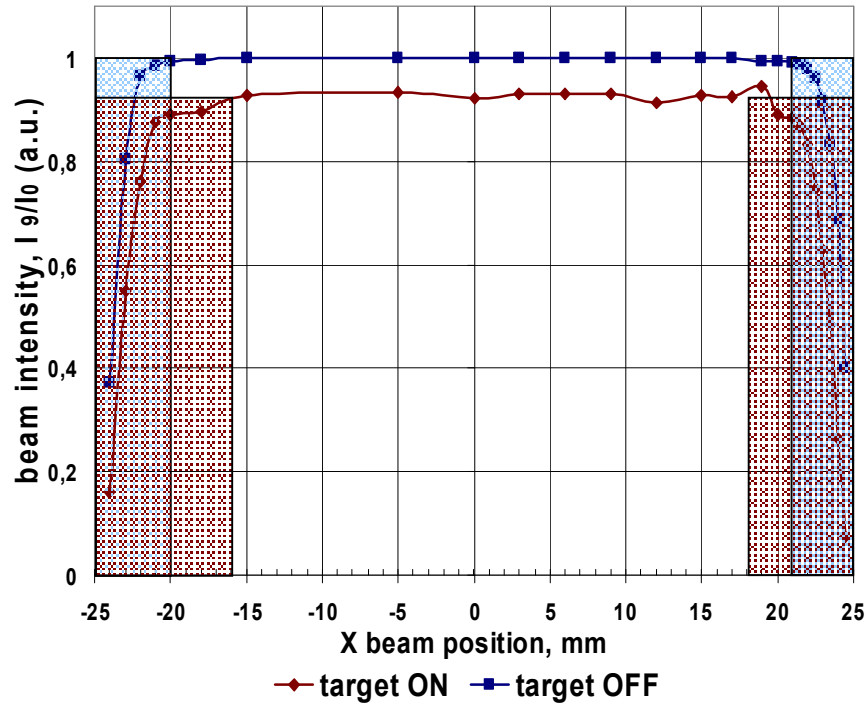
### ❖ Results of the tests



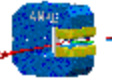
## Big aperture x-scan – raw data



## ❖ Results of the tests

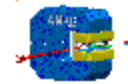


## Tests with an accelerated beam

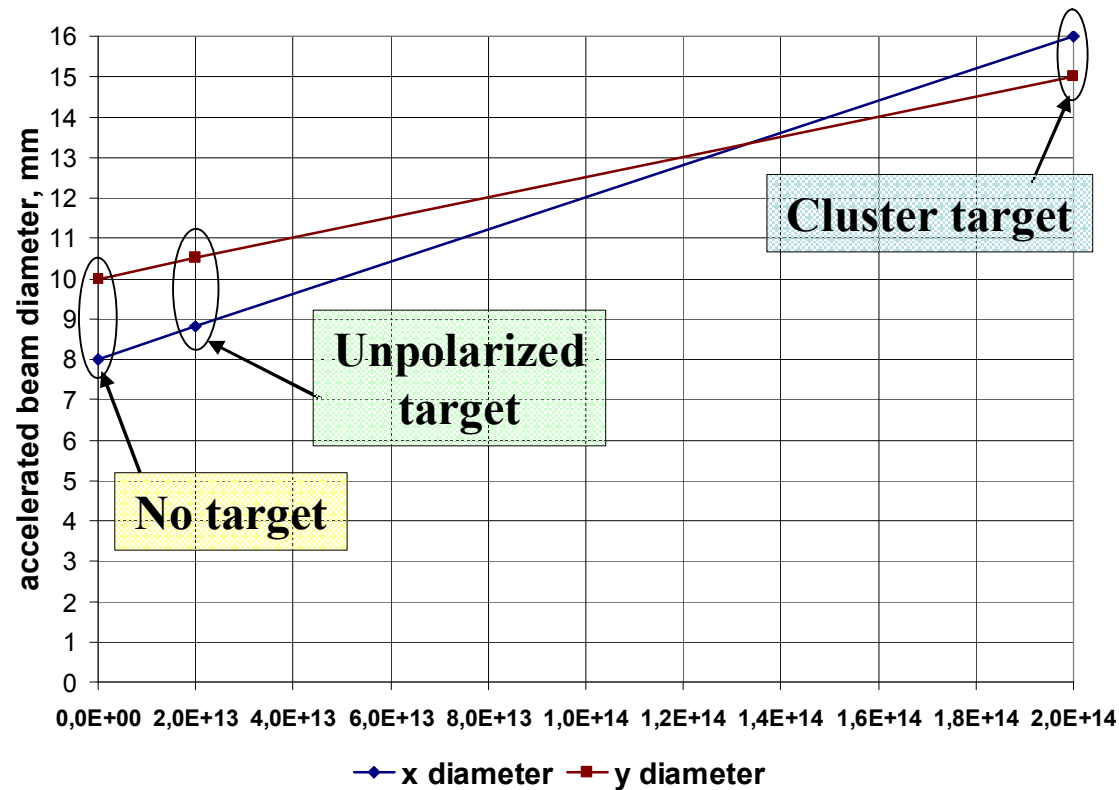


# ***Cell tests for ANKE:***

- ❖ **Main goals for the tests**
- ❖ **Experimental setup**
- ❖ **Results of the tests**
- ❖ **Preparations for next tests**
- ❖ **Outlook**



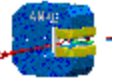
## ❖ Preparations for next tests



System axes	X [mm]	Y [mm]
Beam diameter	8.8	10.5
Cell 1	10	12
Cell 2	15	20

**Estimated beam dimensions and the cell sizes for next tests**

**Vertical (red) and horizontal (blue) beam dimensions based on the measured target density dependence.**

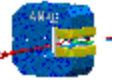


❖ *Preparations for next tests*

**One guide XY-table instead of the used two guides setup.**

- easier to operate**
- smaller place occupied by the setup**

**Tests with long tubes or cells – to determine quantitatively the background from walls of the storage cell target.**



# ***Outlook***

- ✓ **Preferred cell diameters should lie within the interval from 10 to 15 mm**
- ✓ **Is it realistic that COSY beam cross section is like oval? (task for the next tests)**
- ✓ **Results of these tests will be used to build storage cells for the polarized target.**