# Gravity module status Q1 2024

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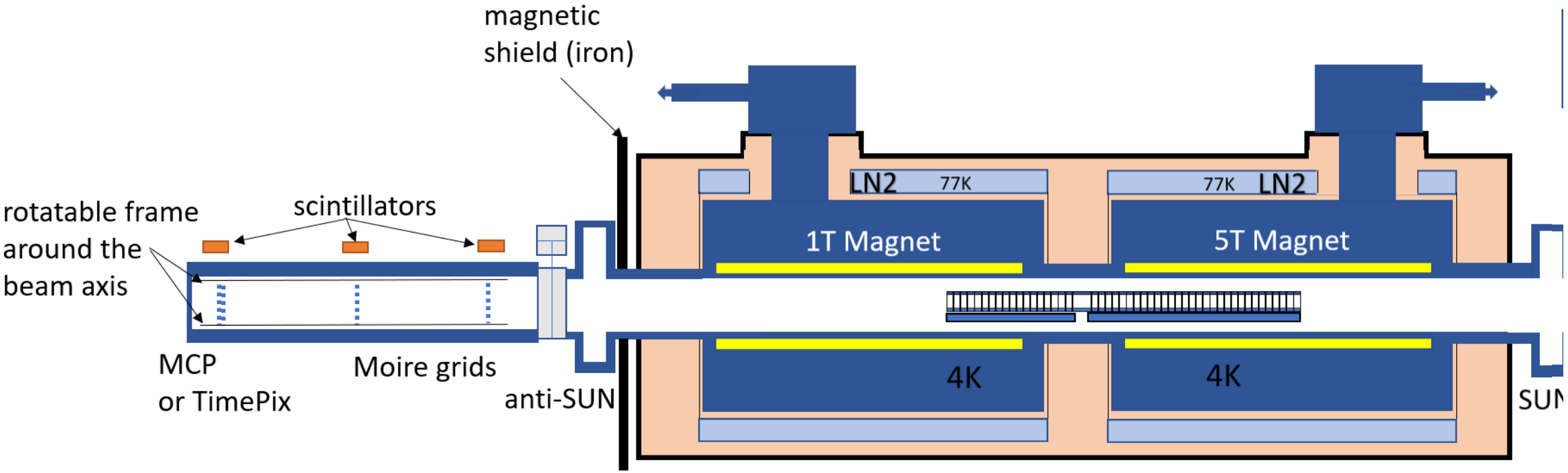
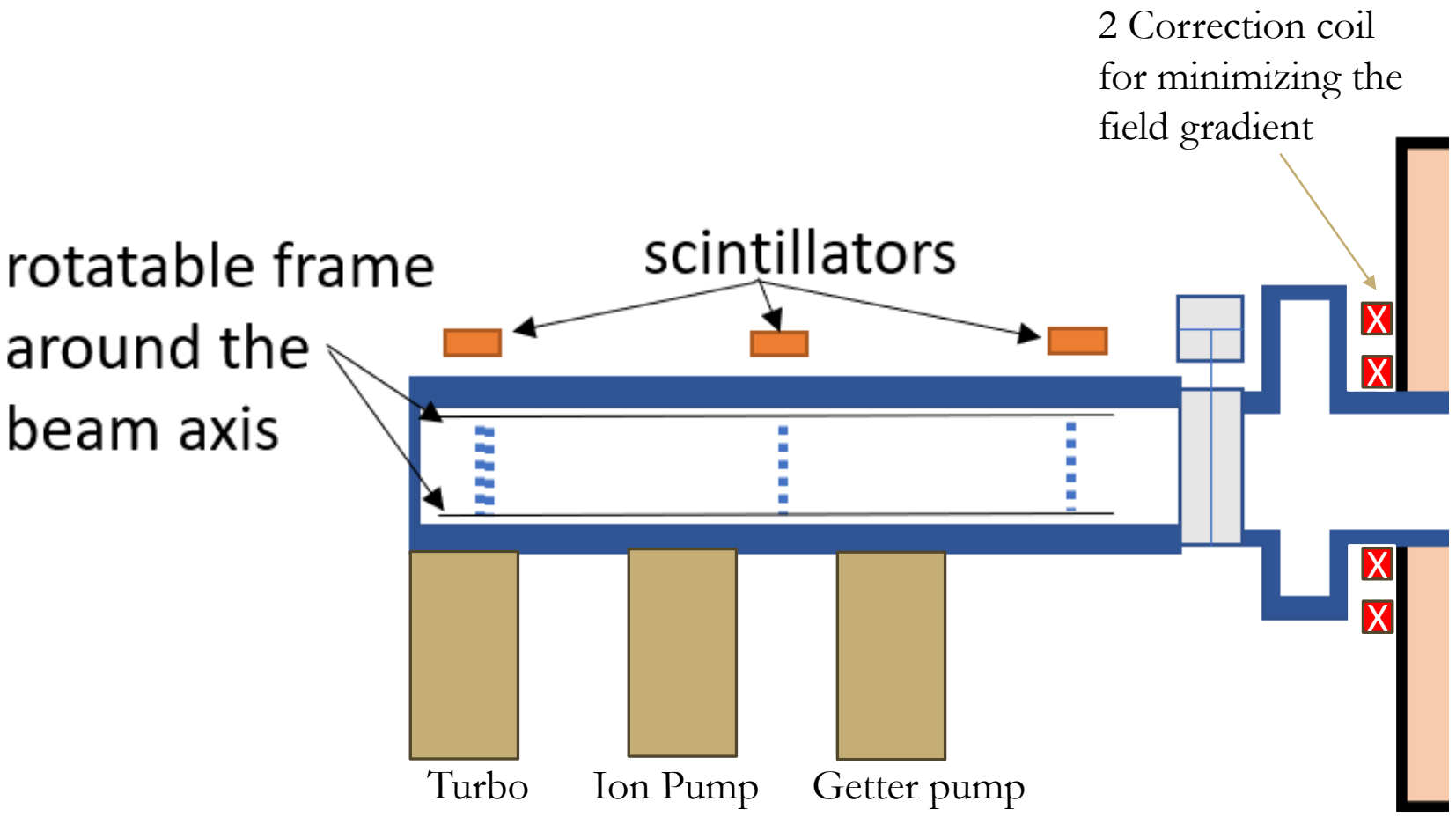
# Overview

- Present design parameters
- First ideas for the Moire
- Equipment at hand
- Detection principle

# The Gravity module



# The Gravity module infrastructure:



## Equipment we have bought already:

- 2 getter pumps ( Capacitor 1000 )
- Ion pump  Starcell 500
- Gate valves
- Decoupling bellow
- Viewport
- Camera for an MCP

## Equipment we still need buy:

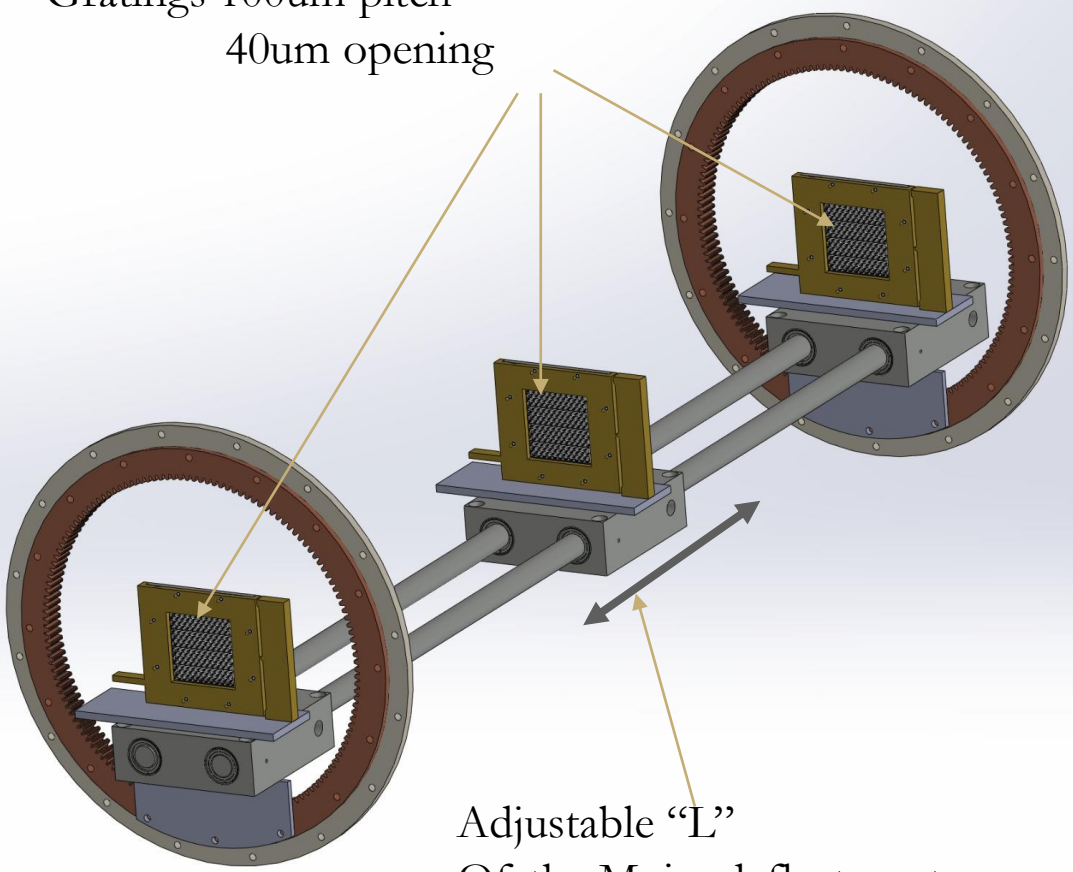
- Large area MCP
- A large CF150 turbo  (at the moment on loan at Borealis )
- Scintillators

## Still to be designed:

- Vacuum chamber with bellow and support frame
- Moire grid holders with angle adjustment in micro-meter range
- Actuators for turning the moire 90 degrees
- Etc, etc….

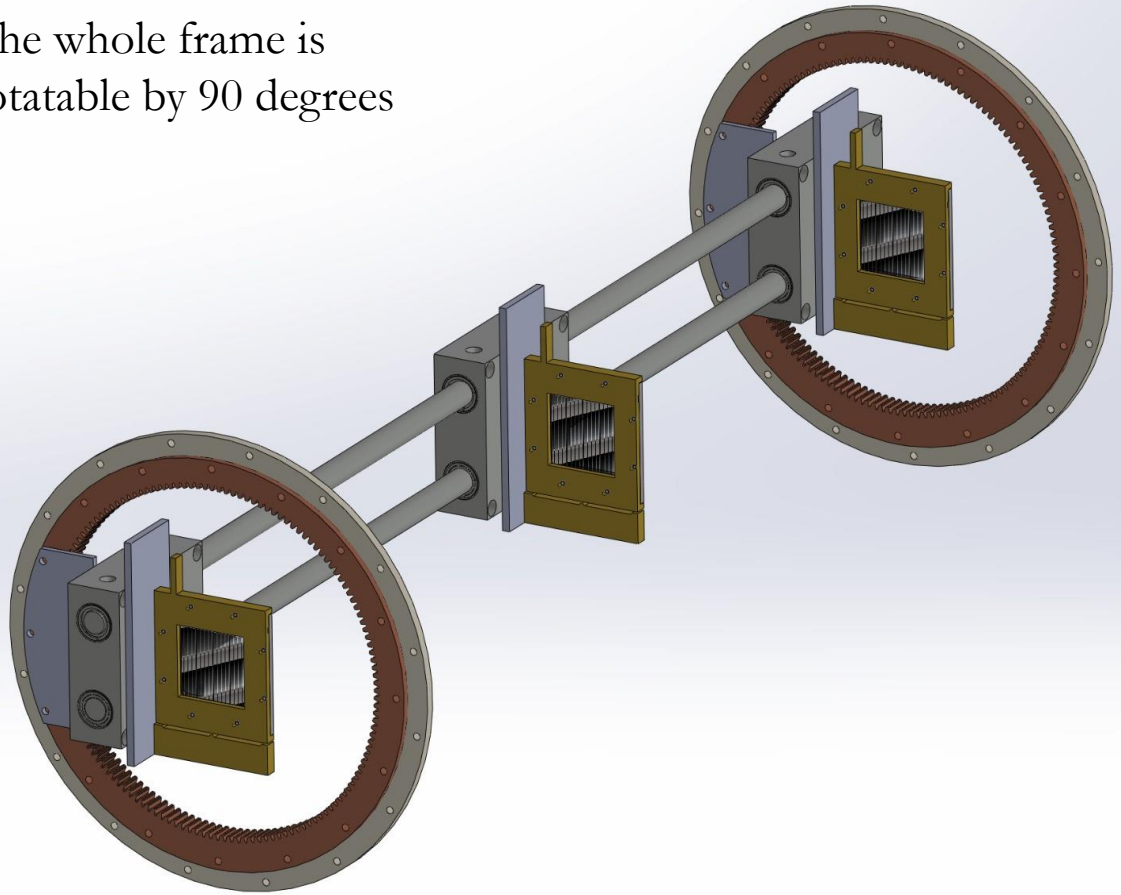
# The Gravity module: ( a first sketch for discussions )

Gratings 100um pitch
40um opening



Adjustable “L”
Of the Moire deflectometer

The whole frame is
rotatable by 90 degrees



# Two possible detectors for the H-bars:

## 1. Large area MCP

- Pros:
  - Known technology
  - Easy to operate
  - Possibility to turn the device with the Moire grids
  - No timing info necessary
- Cons:
  - Not sensitive to light for alignment purpose
  - Much more complex third grating assembly (longitudinal and angle adjustment)
  - Scanning measurement of g needs much more H-bars

## 2. Camera solution from Franz/Bergi/Markus

- Pros:
  - No third grading necessary, hence much simpler Moire design
  - No scanning measurement, hence much faster data taking
  - Light sensitive for alignment of the grids
- Cons:
  - No individual timing info,- no time-of-arrival for each single H-bar, just global exposure time of the camers
  - Cannot be turned with the Moire grids, probably fixed installed on the end flange
  - Huge data files of several Gbytes per image