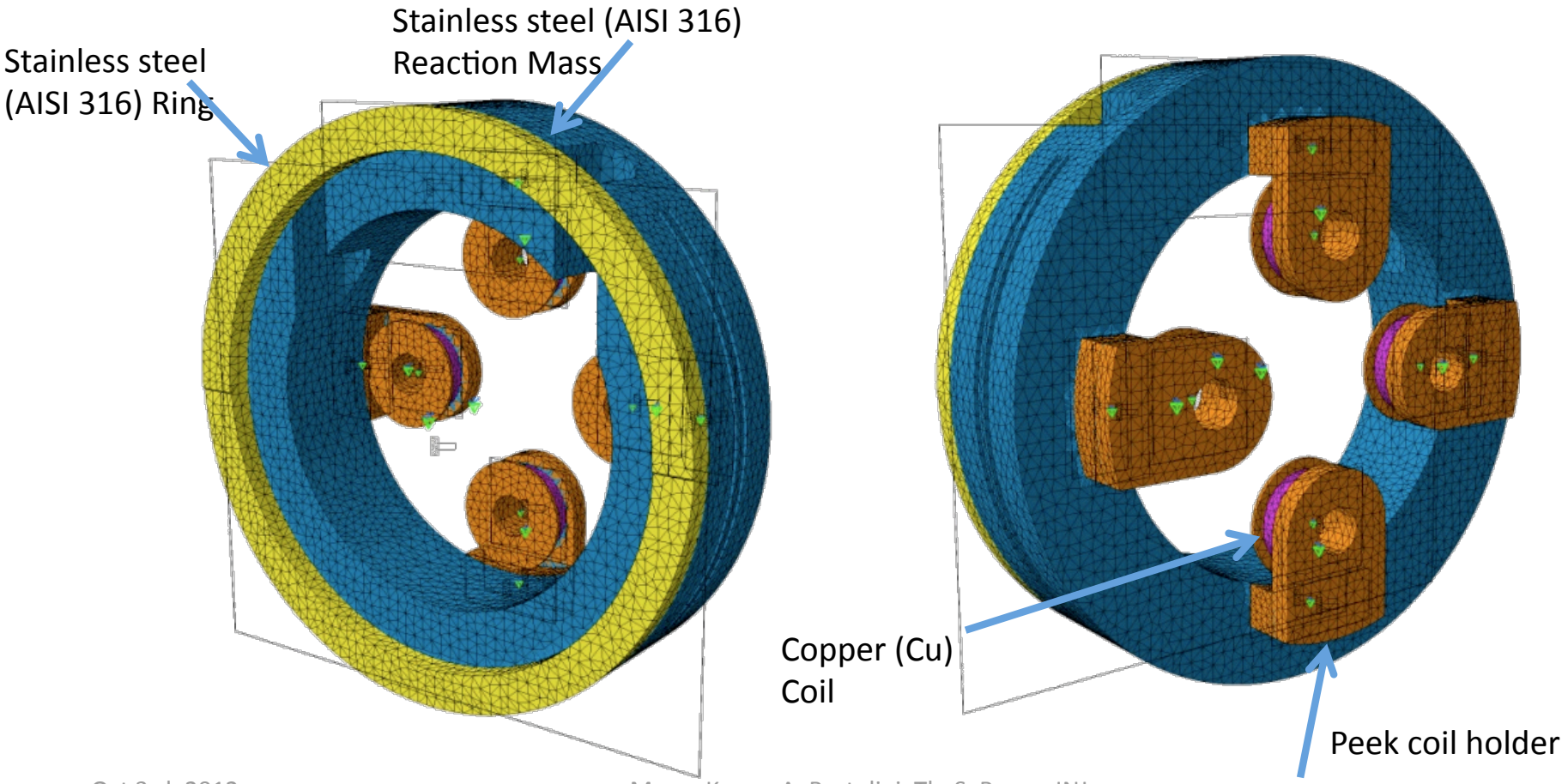
IMC Reaction Mass
Free Frequency simulation

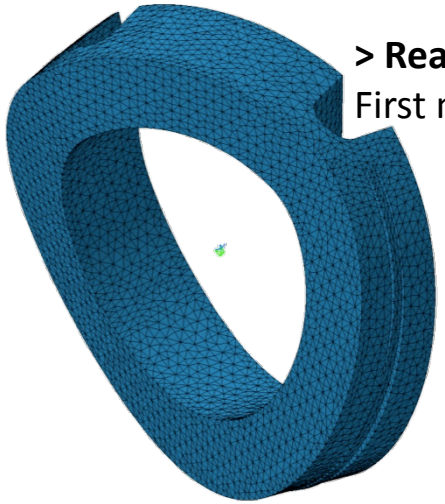
> FEA Model:



IMC Reaction Mass

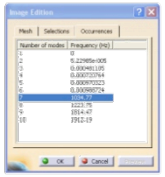
Free Frequency simulation

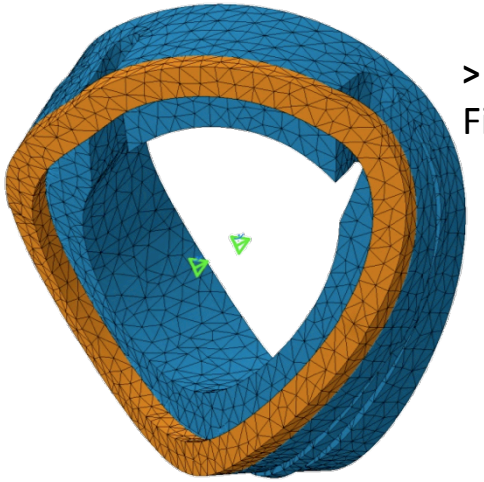
> Results:



> Reaction Mass

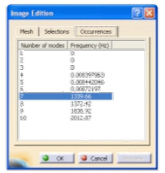
First mode = **1034 Hz**

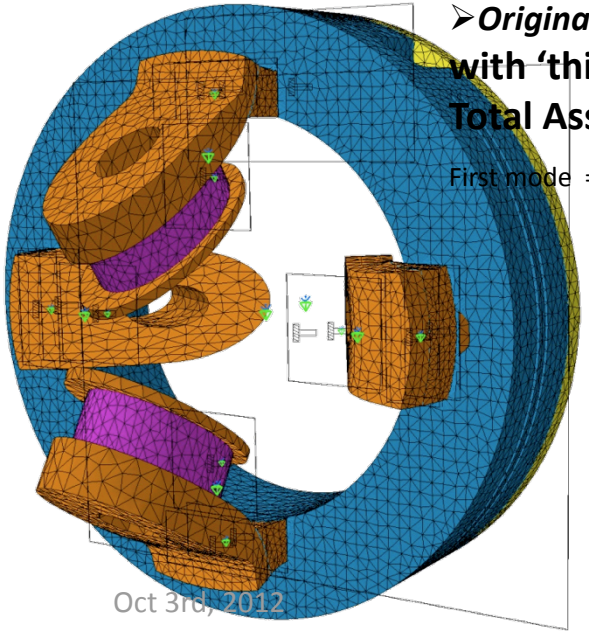




> Reaction Mass+ring

First mode = **1399 Hz**



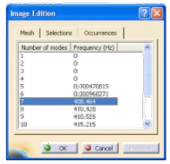


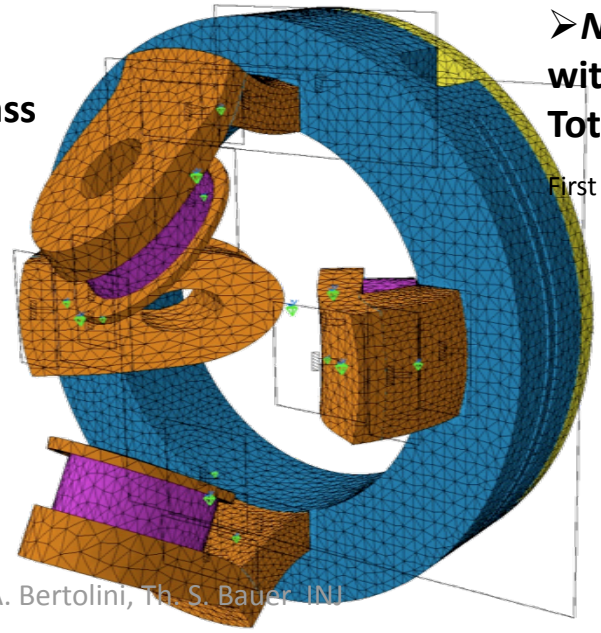
➢ ***Original*** **version**

with 'thin' coil spacers

Total Assembly Reaction Mass

First mode = **408 Hz**



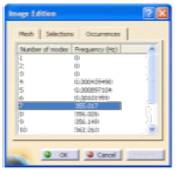


➢ ***New*** **version**

with higher coil spacers

Total Assembly Reaction Mass

First mode = **355 Hz**



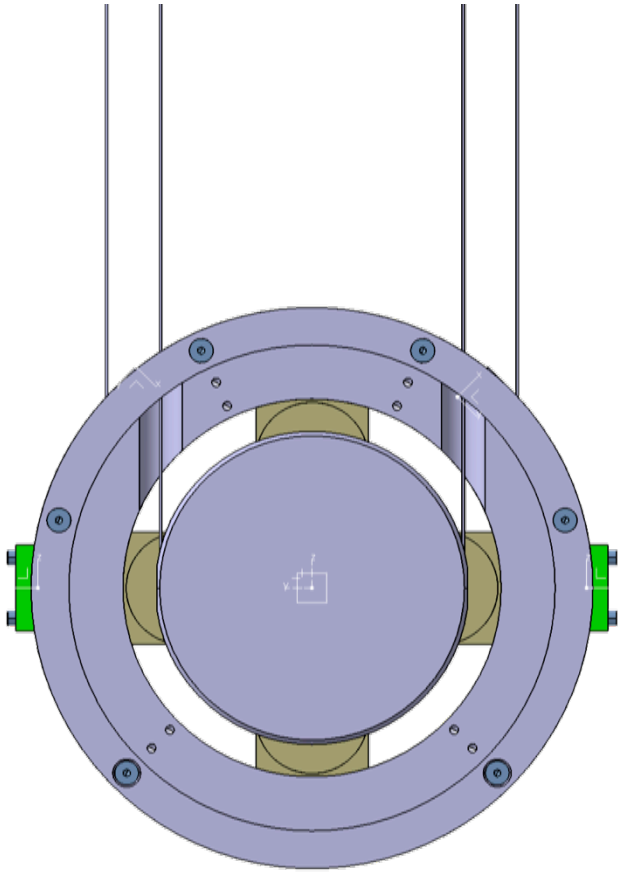
IMC Reaction Mass
Free Frequency simulation

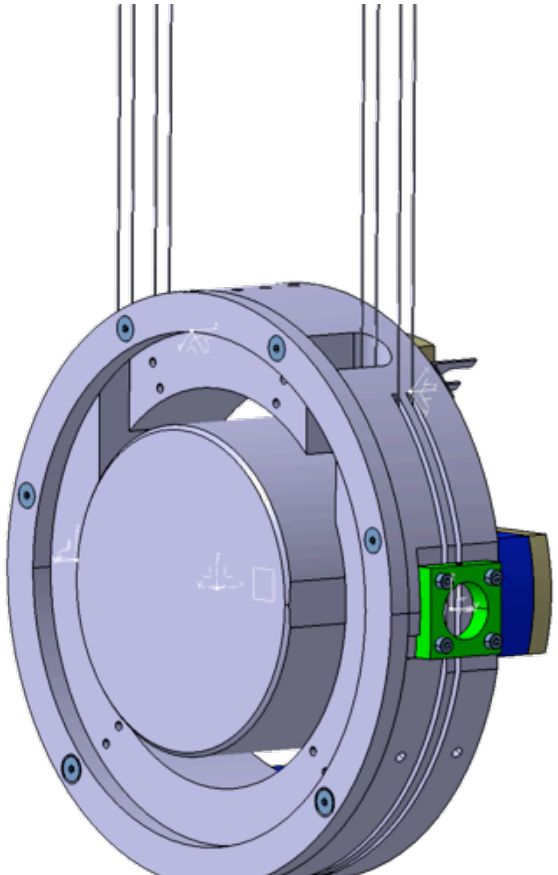
> FEA Actions:

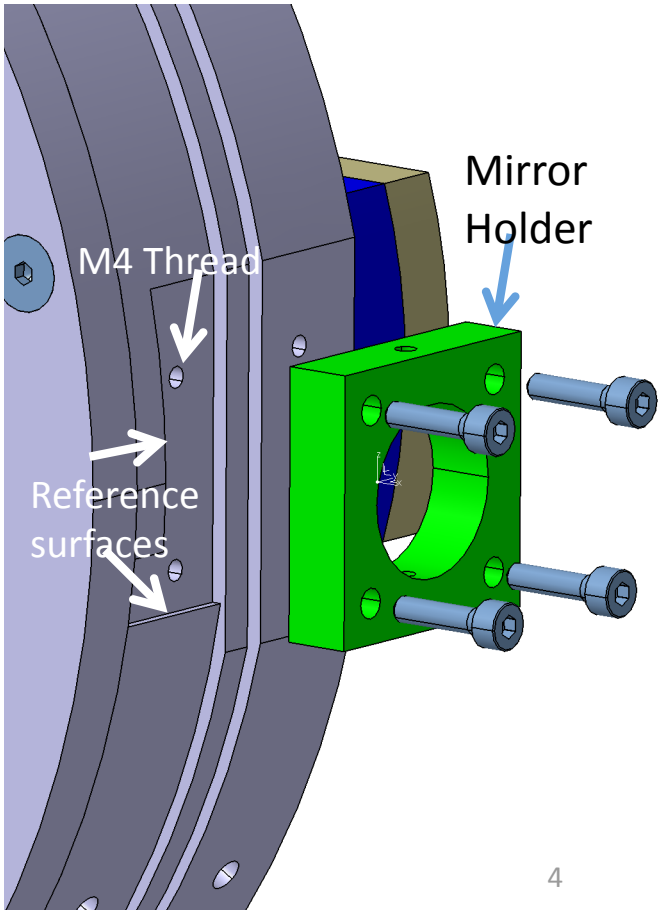
Frequency Simulations **with** the 4 half Baffles.
> For this we need final material en geometrical information

IMC Reaction Mass
Modifications

To accommodate at north side a small mirror and at the opposite side a small counterweight (for balancing). Added are two flat surfaces (127mm from the centerline) with 2 reference surfaces, and 4 x M4 threaded holes





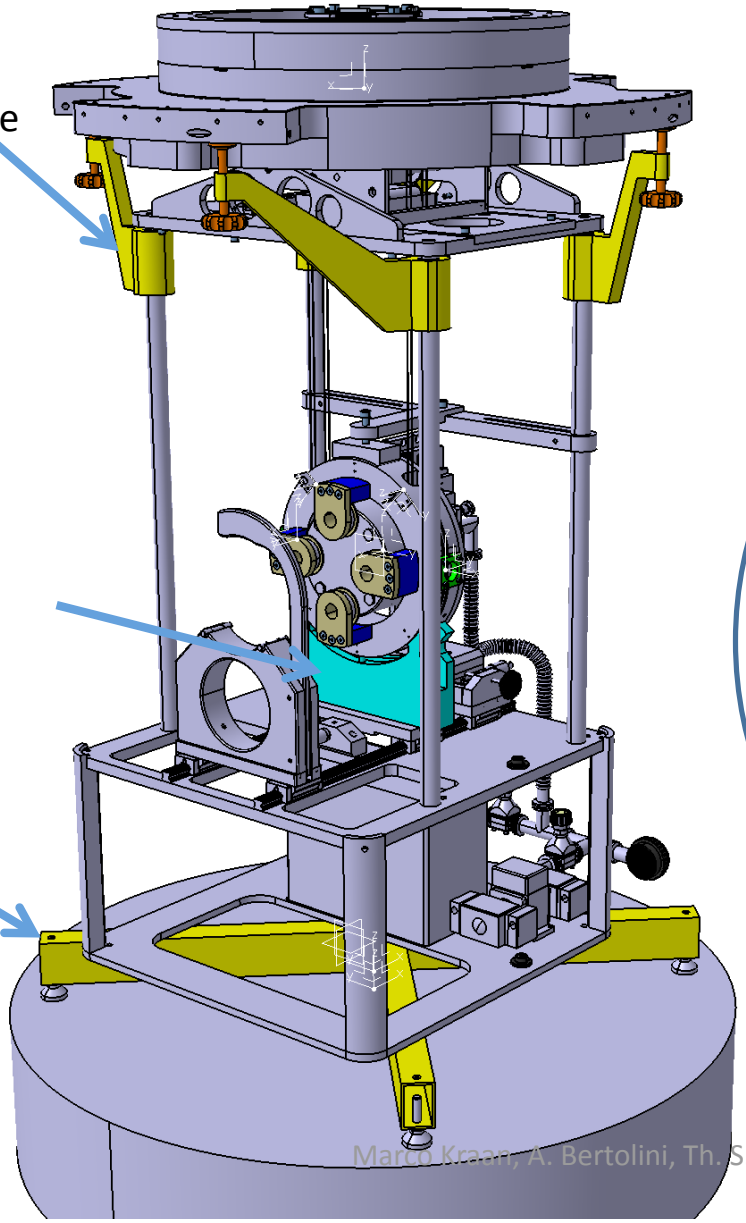


IMC Installation Frame
Modifications

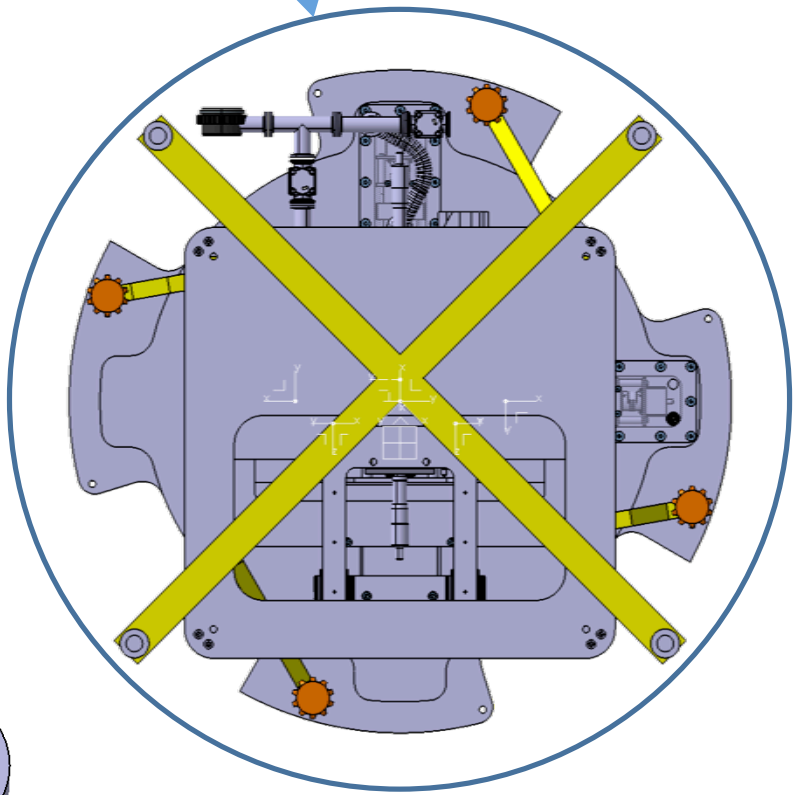
Supports to Marionette to get more stability and weight transfer to installation frame

New Reaction Mass Support. to get (a.o.) more space for mounting the small mirror supports

Extended bottom frame for more stability



Tower lift



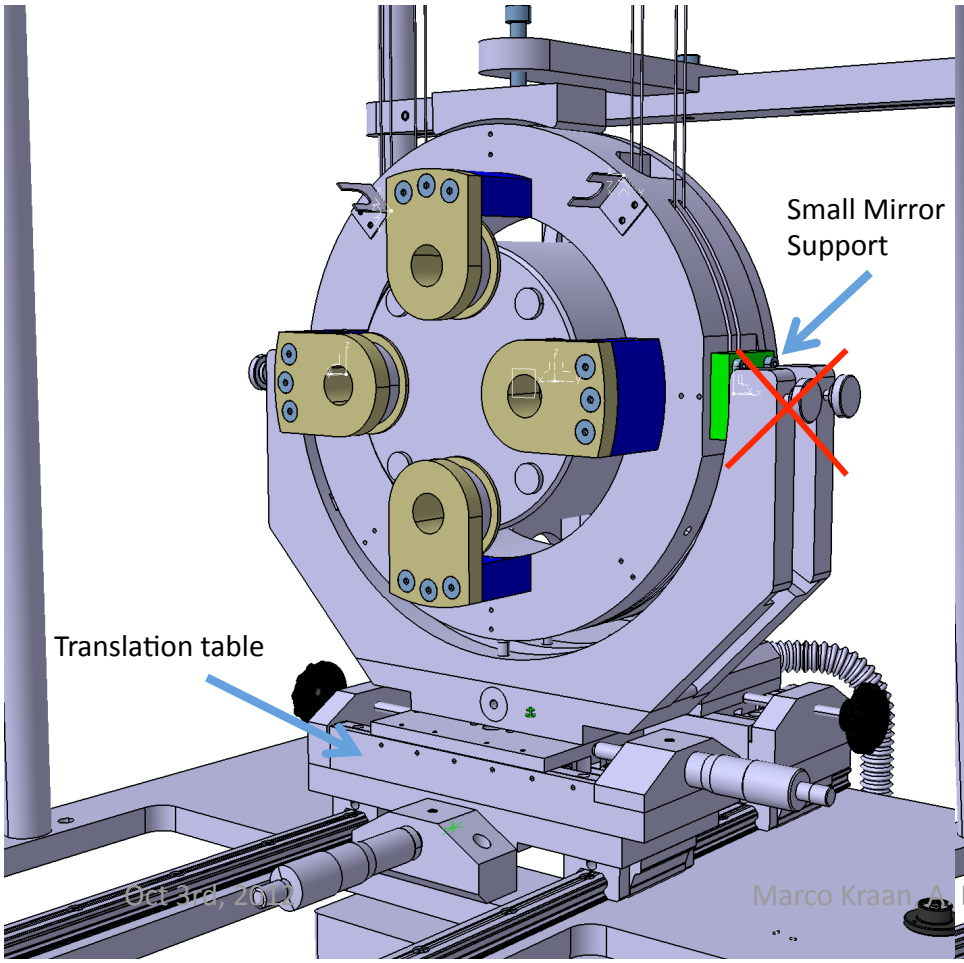
Bottom View

IMC Installation Frame

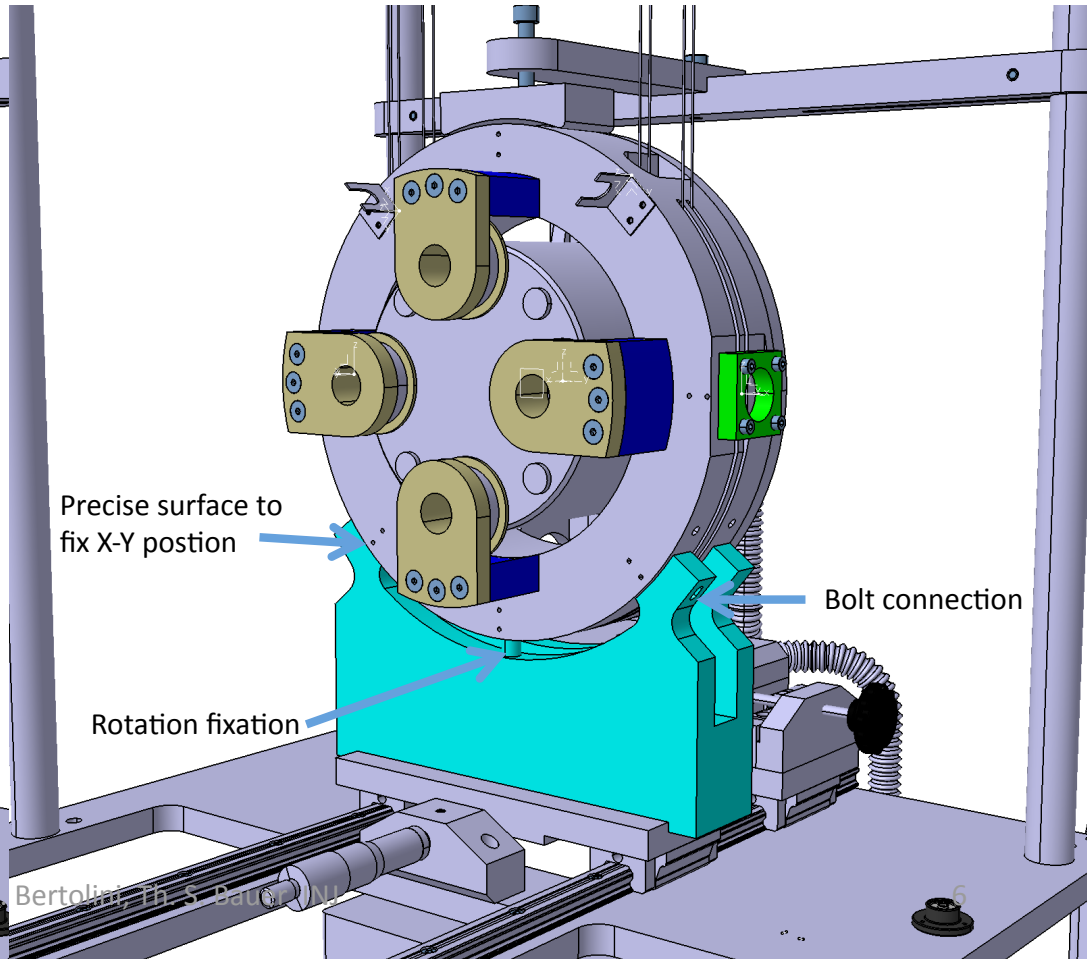
Reaction Mass Support Modifications

To get more space for i.a. mounting the small mirror supports and more straight forward installation. For this the translation table is removed and a precise support, with geometrical X-Y position and rotation fixation, is added:

> Original Support



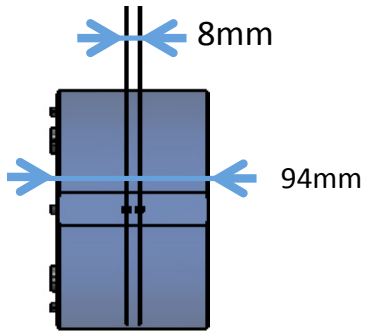
> New Support



Imput Mode Cleaner

> Design Questions:

1. A layout drawing of Tower lift plate i.a. for fixation points of the IMC installation frame to the Tower lift.
2. Pitch of the mirror wires is still 8mm (thickness of the mirror is increased 45 -> 94mm), changing will have effect of the Gearbox design and Reaction mass.



> Design Actions:

3. Design and material of the Baffles. Different materials ask different ways of fixations. This has a strong influence on the design!

Imput Mode Cleaner

> Design Actions:

1. Adjust contra masses in IMC for adding weights of baffles and two small mirrors.
2. Fixation of baffles to reaction mass.
3. Finalize installation procedure.
4. Design new mirror container.