

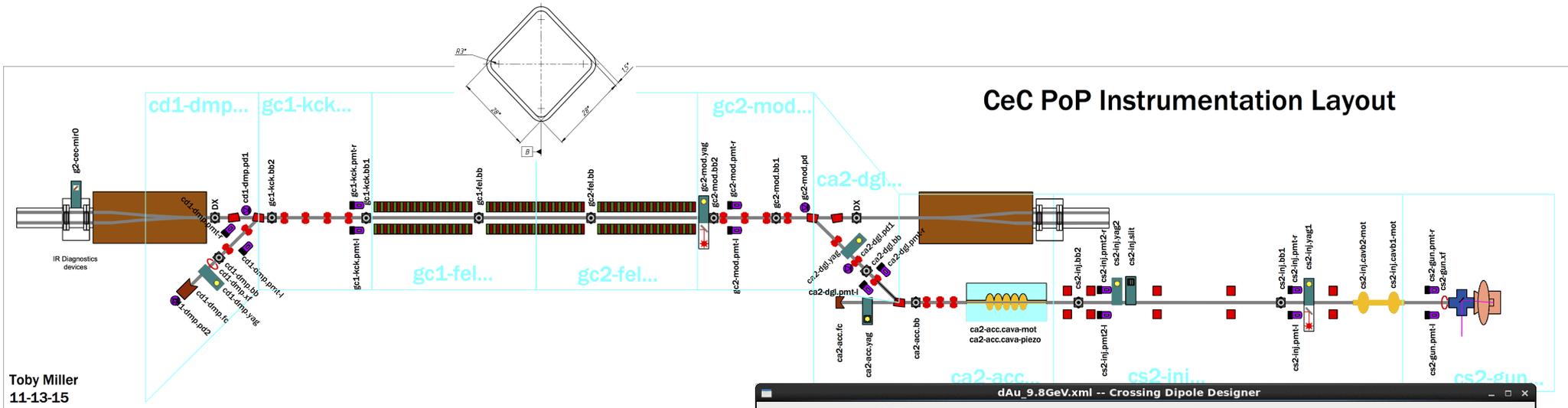
IR2 aperture study

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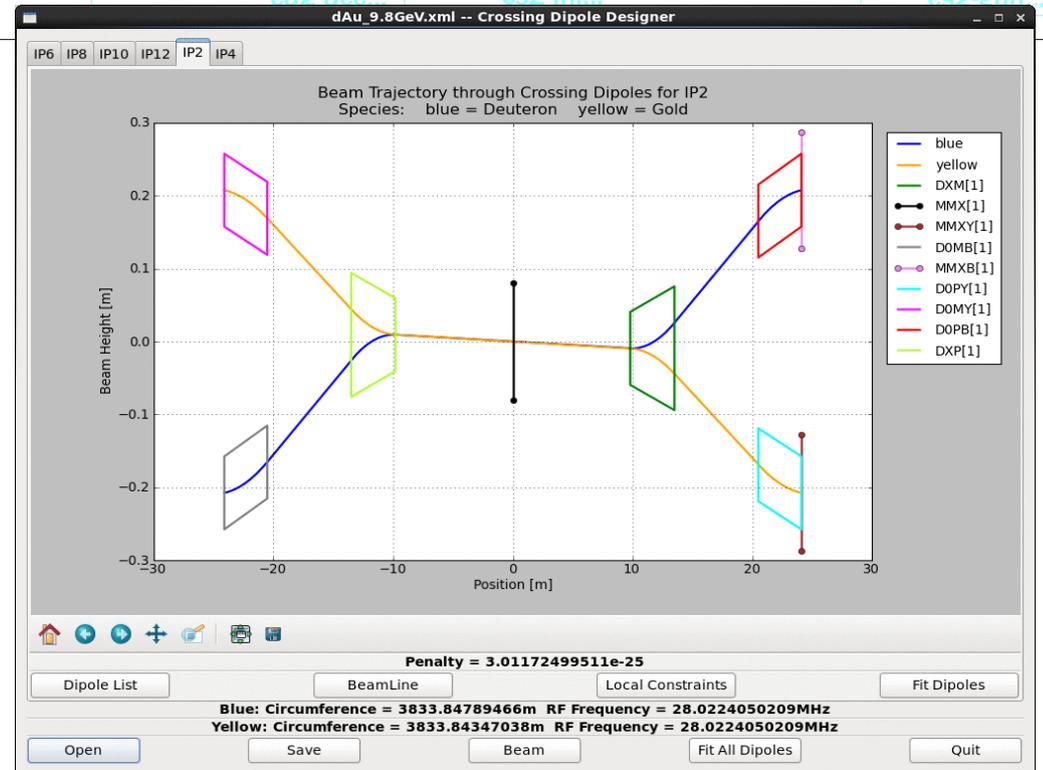
Studied on 2/10/2016

Presented on 2/11/2016 APEX meeting

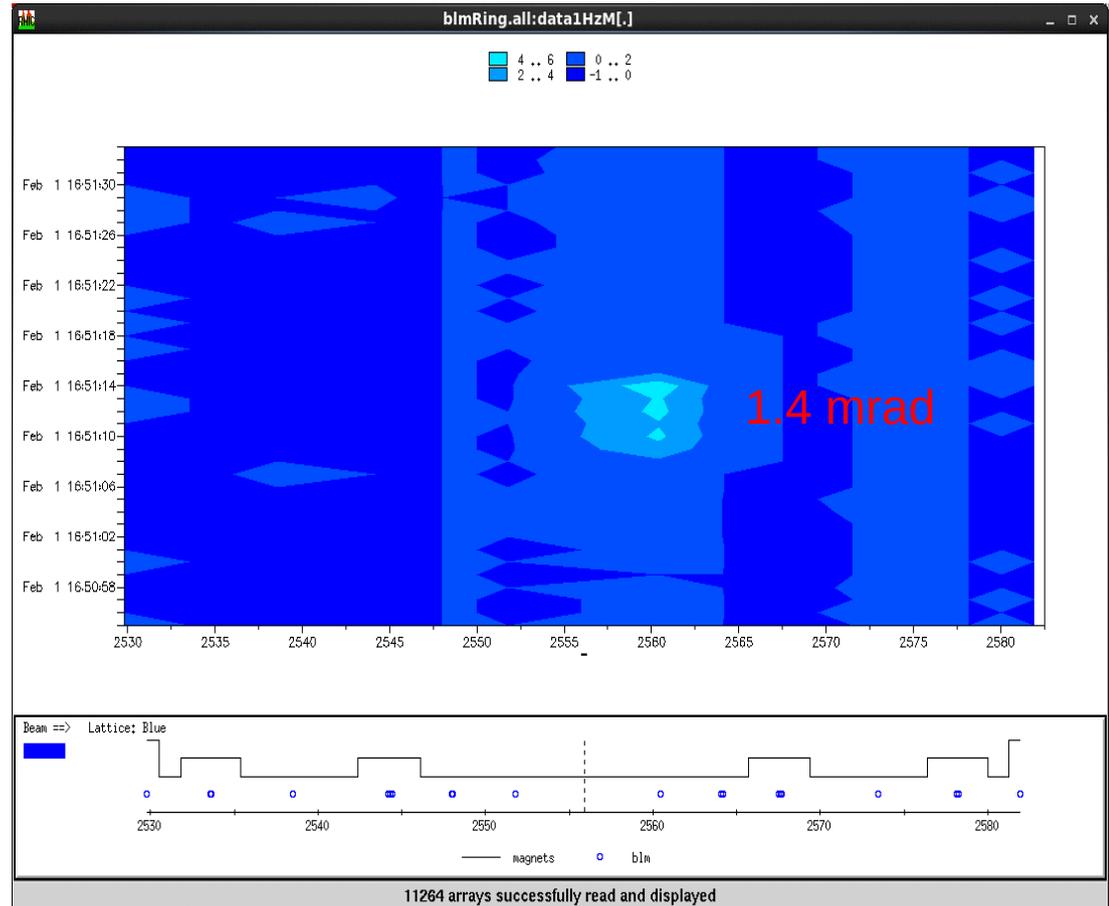
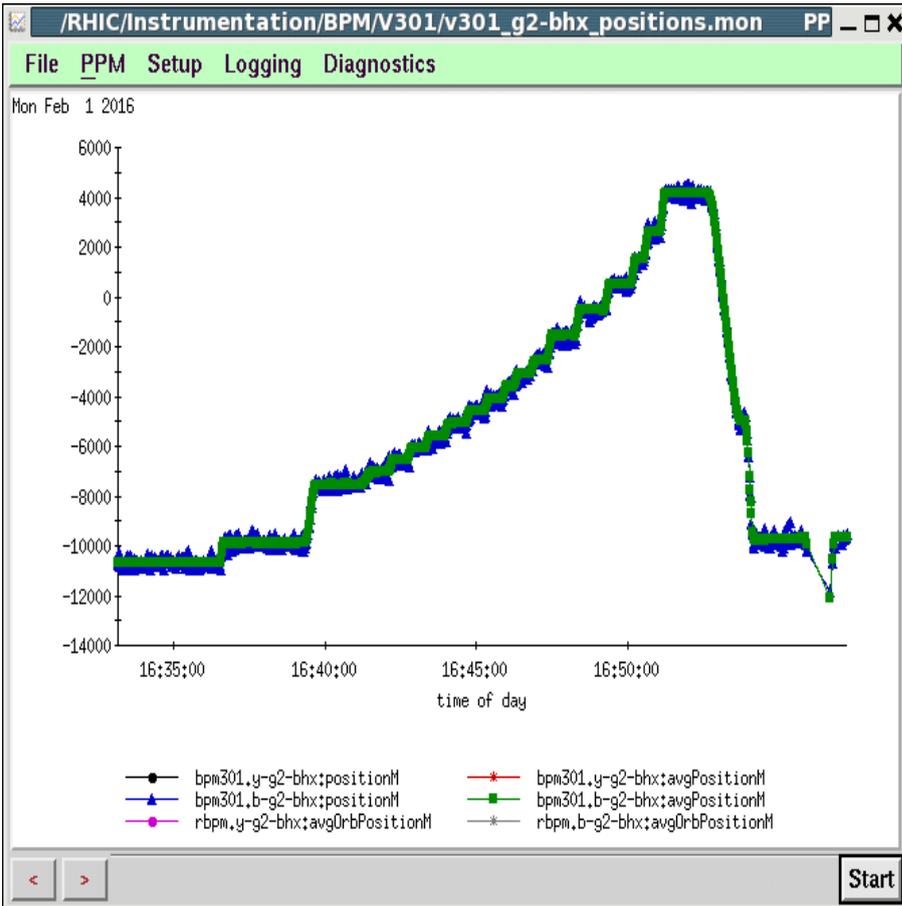
IR2 layout and orbit



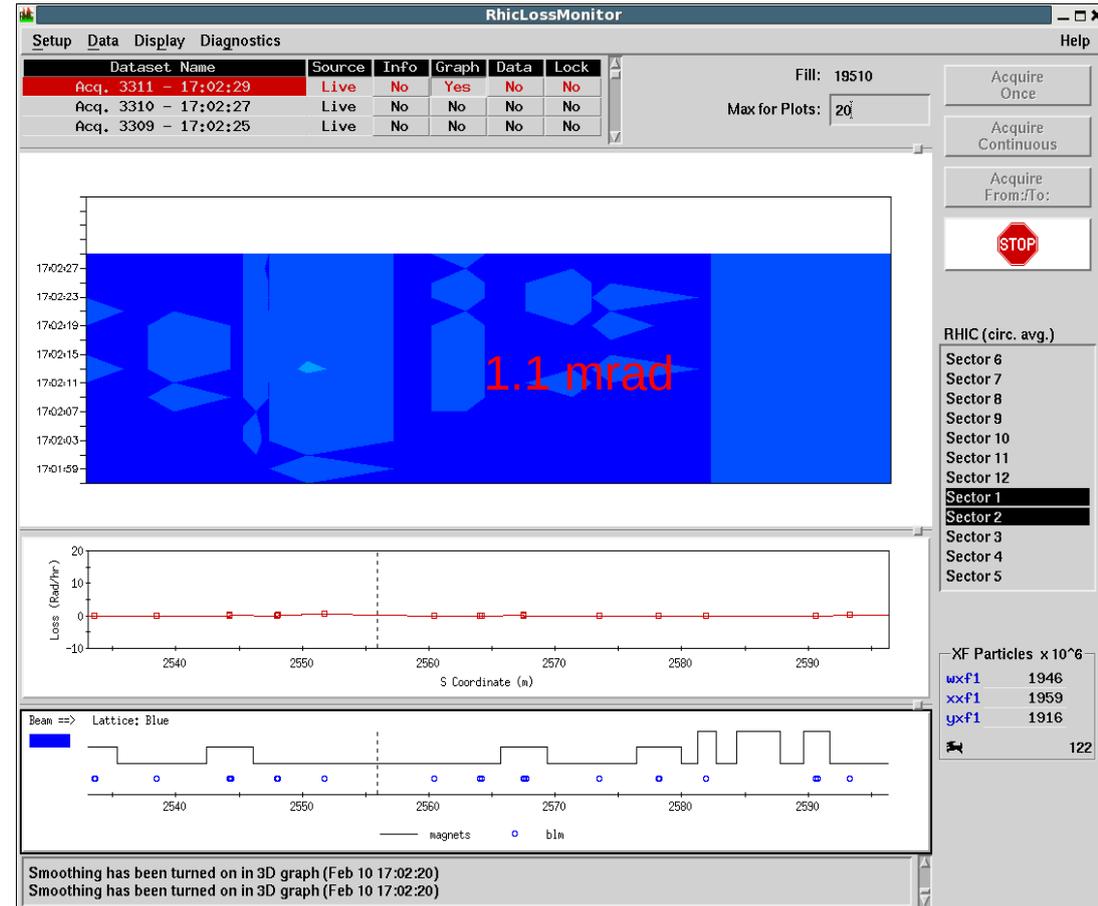
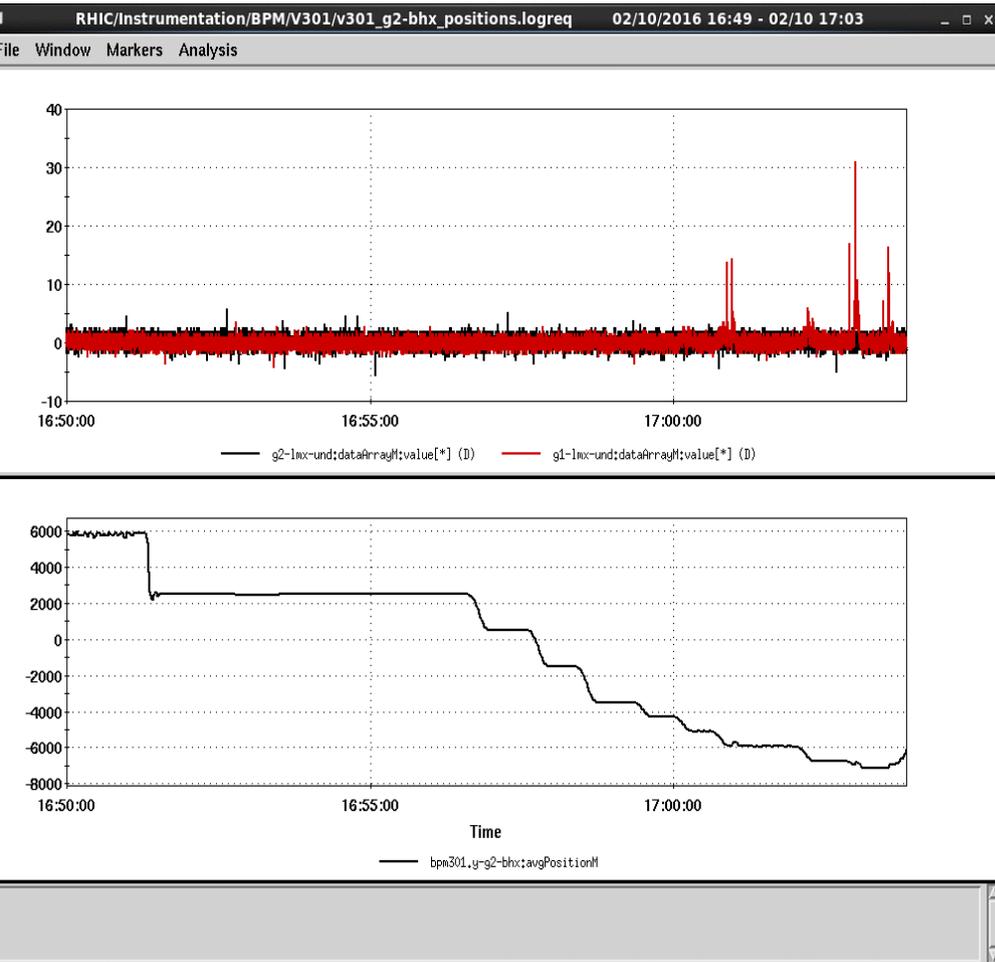
Toby Miller
11-13-15



Scan with Blue beam



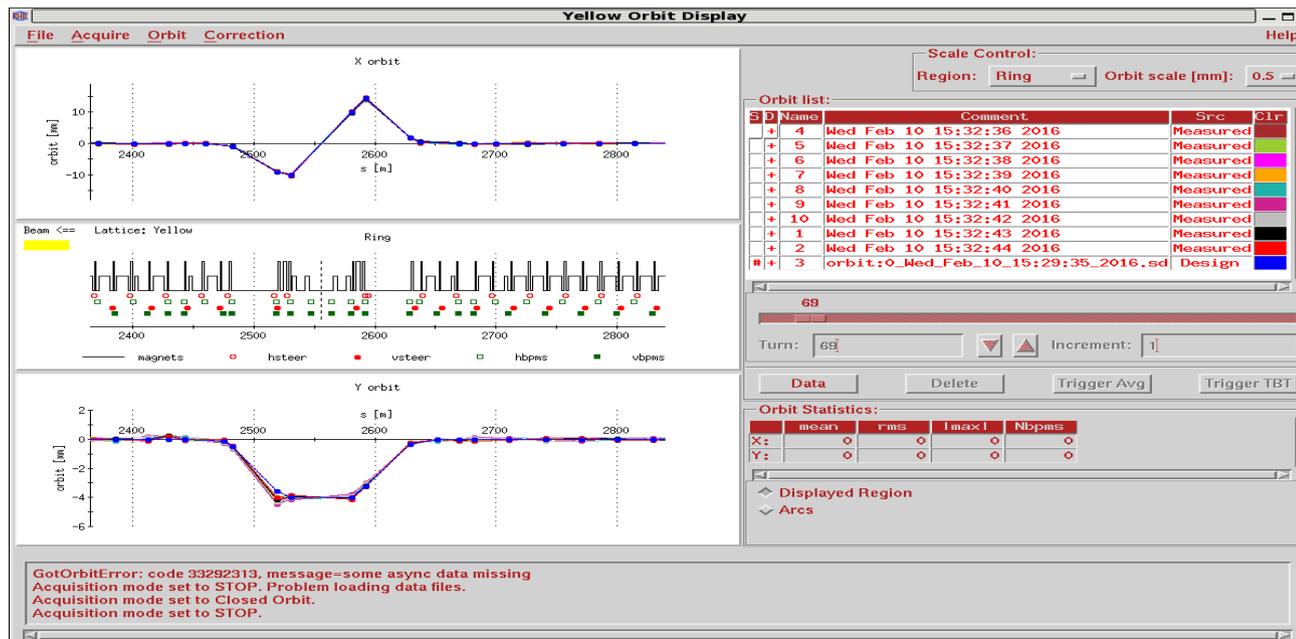
Scan with Yellow beam



Inject beam with angle at IR2

We attempted to inject beam with angle at IR2. The angle is required to be smaller than 0.7 mrad to avoid injection loss at IR2.

D0 offset and angle



IR2 D0 offset: 0.01 m, angle: -0.0005 rad. th3: 2.0 mrad, th5: -2.6 mrad, th2: -0.46 mrad, th4: 4.0 mrad.

IR2 D0 offset: 0.01 m, angle: -0.0003 rad. th3: 0.0 mrad, th5: -2.2 mrad, th2: 1.7 mrad, th4: 3.8 mrad.

IR2 D0 offset: 0.01 m, angle: -0.0000 rad. th3: -3.1 mrad, th5: -1.4 mrad, th2: 4.8 mrad, th4: 3.6 mrad.

IR2 D0 offset: 0.01 m, angle: +0.0002 rad. th3: -5.2 mrad, th5: -1.0 mrad, th2: 7.0 mrad, th4: 3.4 mrad.

IR2 D0 offset: 0.01 m, angle: -0.0003 rad. is the optimal settings.

Plans

- 1. Scan Yellow beam horizontally with angle at +/-4 vertical offset.
- 2. Injection Yellow beam at designed dAu angle (1 mrad).
- 3. Tests to reduce the design angle for dAu (D0 offset, D0 angle).
- 4. Test +/-3 vertical separation.
- 5. Position bump scan to map out the aperture.