Spin Tilt Study

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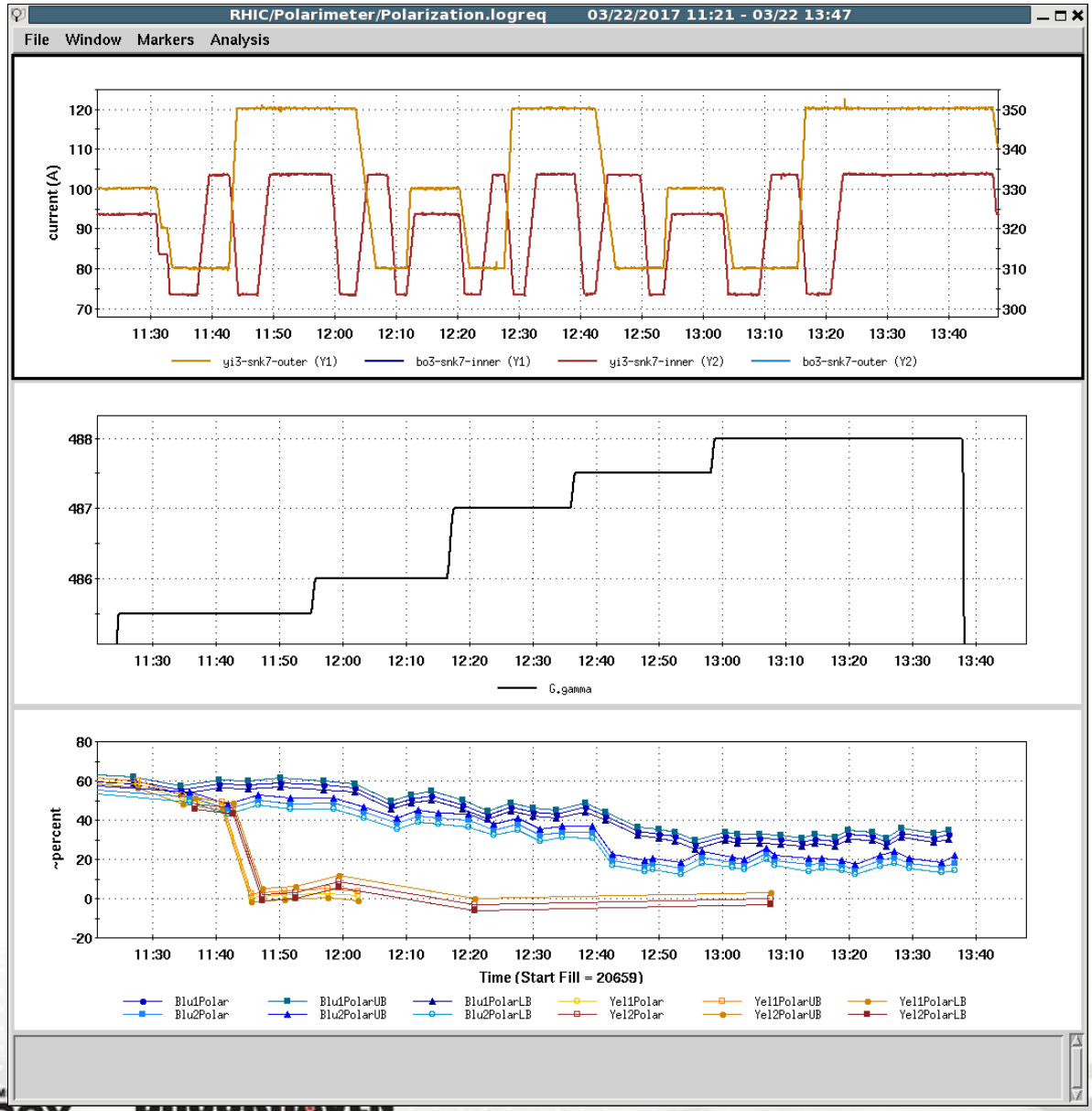
Summary of Spin Tilt Study

- Three ramps were attempted. The first one was lost at store due to vacuum pressure rise at IP6: we turned off STAR magnet and e-cloud built up. We only had one set of polarization measurements at nominal snake current settings.
- Next ramp was successful and we had blue beam polarized till the end. Polarization was measured at each energy (five of them) and five snake configurations. The angle error bar got larger at later part of the experiment as the polarization value went down. Yellow polarization was lost unexpected at Ggamma=485.5 when switching from (80A,333A) to (120A, 303A).
- Last ramp to measure spin angle near injection failed due to larger step in the energy adjustment.

Snake Current, Beam Energy, Polarization



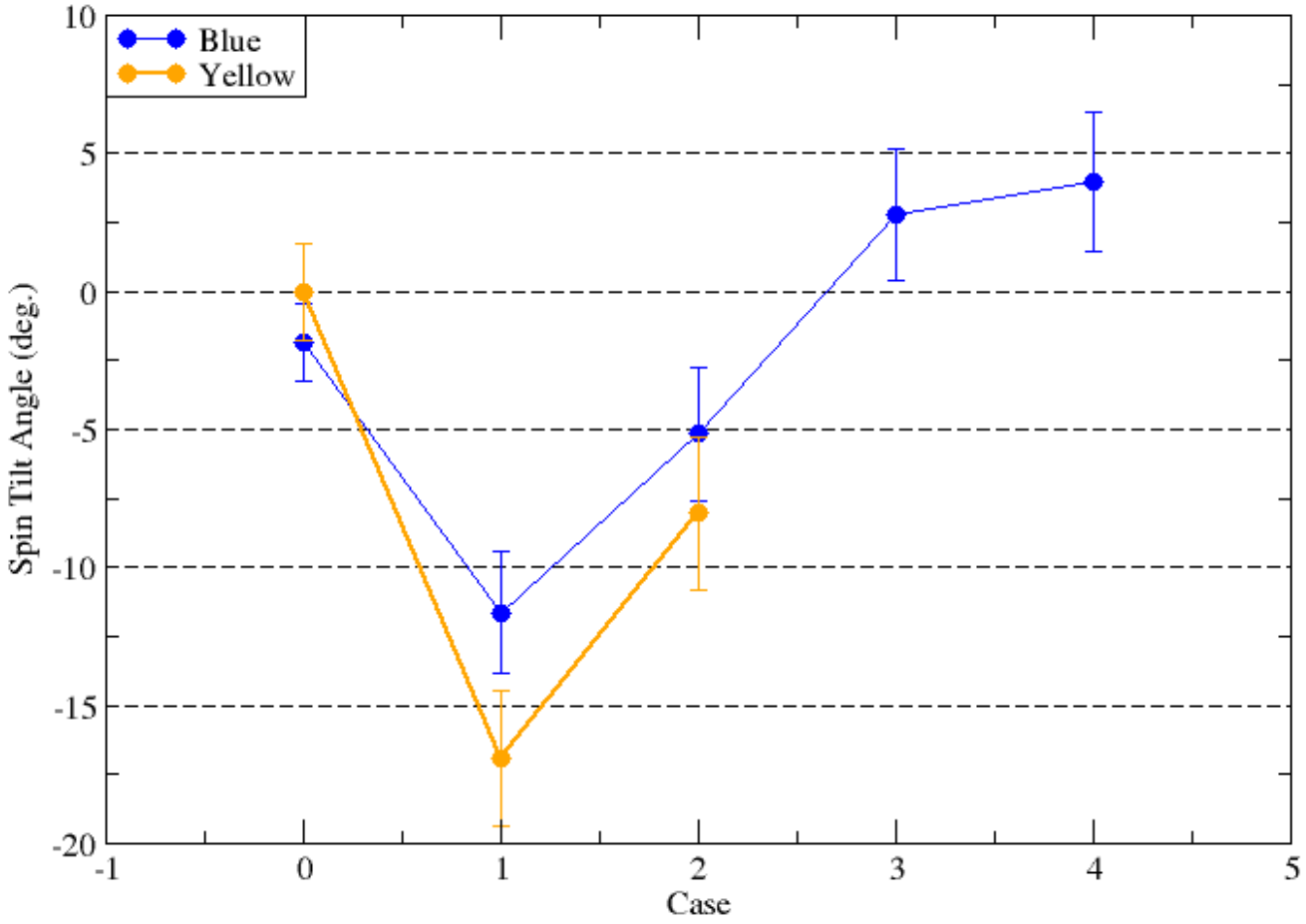
Snake Current

Beam Gγ

Polarization

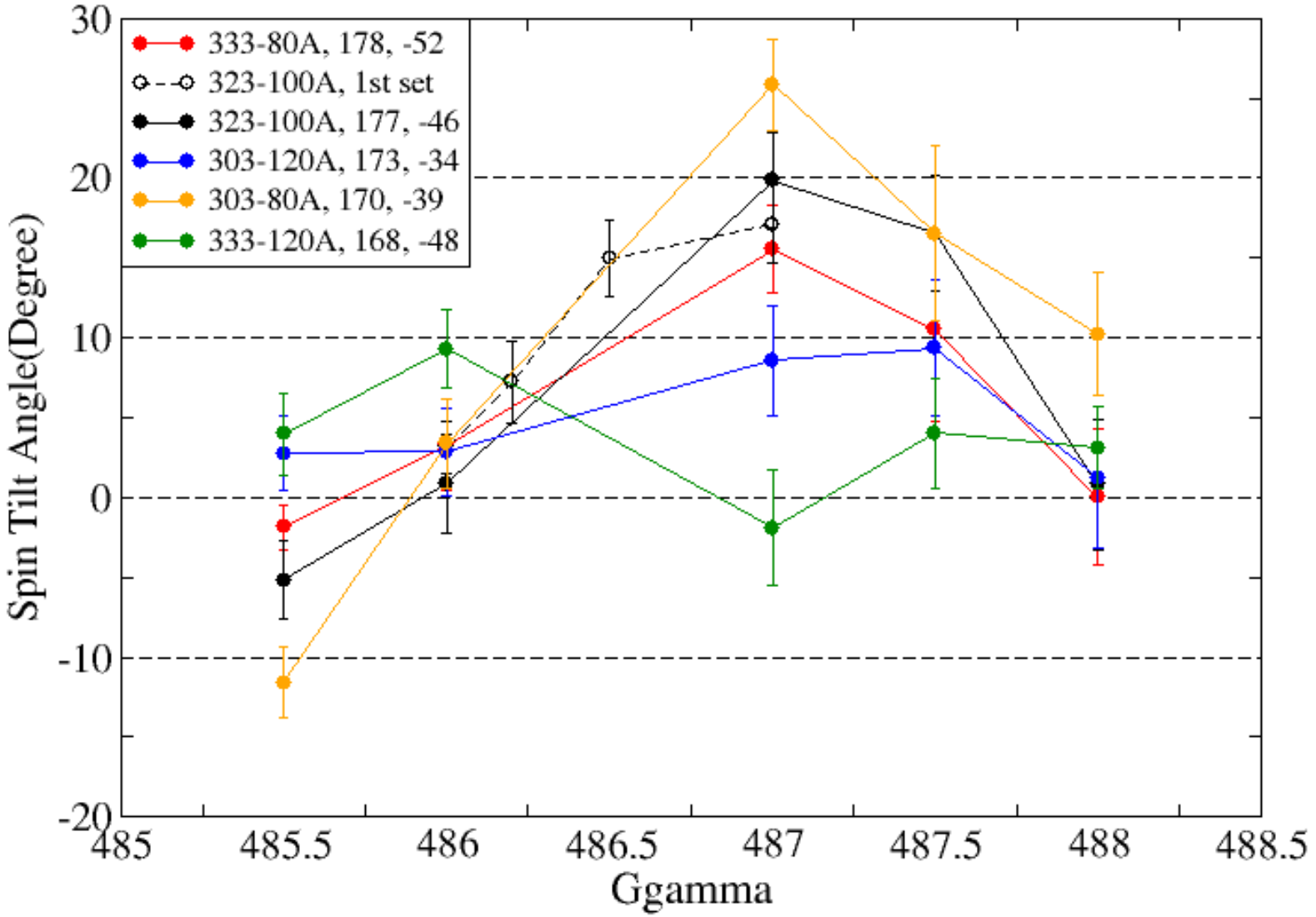
Snake Current San at Ggamma=485.5

0: 323-100A; 1: 303-80A; 2:333-80A; 3: 303-120A; 4: 333-120A



Blue and Yellow showed similar pattern for the first three cases. We lost yellow polarization when switching to the 3rd case. The 0th case is the nominal running current.

Spin Tilt Angle for Various Snake Settings



By fitting these data, we hope to get the currents required for full snake (180 degree) and proper axis(45 degree).