

Preparing TDR Data for Automated QC

The CIMMS-RadarQC (CRQC) software seems to do a better job with automated QC of NOAA TDR data when the data have been preprocessed using SOLO (ii/3)

The editing pane in SOLO should be configured with the following “Commands For Each Ray”:

```
duplicate <input reflectivity variable> in <name to assign to output reflectivity>
duplicate <input velocity variable> in <name to assign to output velocity>
remove-only-surface in <output reflectivity variable>
remove-only-surface in <output velocity variable>
```

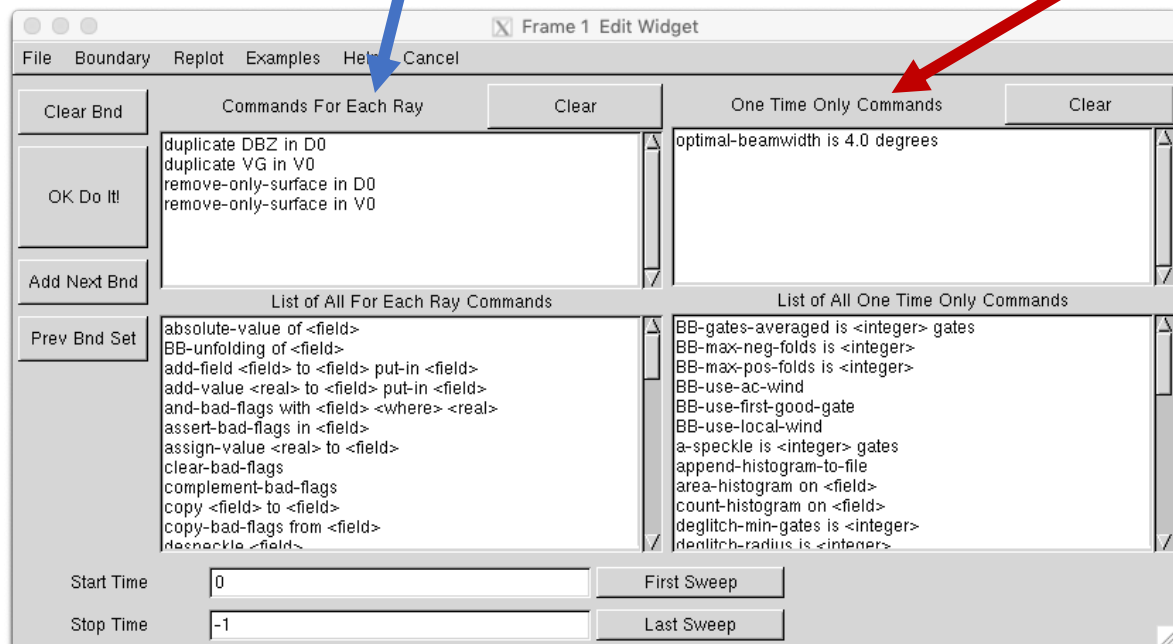
The variable names you assign to the output reflectivity and velocity variables should be the same as the input field names within the CRQC input file

It is important to use the `remove-only-surface` command and not the `remove-surface` command

- `remove-surface` is far more aggressive and tends to discard too many valid meteorological returns

The “One Time Only Commands” should include a single line:

```
optimal-beamwidth is <float> degrees
```



Using `remove-only-surface` without the `optimal-beamwidth` one-time command uses the radar beamwidth indicated in the file metadata (should be $\sim 1.8^\circ$ for the TDR)

- Small values of beamwidth tend to leave more surface-contaminated echoes behind
- Testing suggests that a **beamwidth of 4.0°** removes a sufficient amount of surface gates with minimal removal of meteorological returns within the **VORTEX-SE 2017** TDR data
 - A **beamwidth of 3.0°** seems to be adequate for **TORUS 2019** TDR data