JWST/NIRSpec MOS Observing Mode

- JWST/NIRSpec Instrument
- ~0.6 – 5 um
- Medium and High res (R~1000, 2700), plus low-res Prism (R~100, but larger multiplexing)

- The microshutter array (MSA) is a **four-quadrant fixed grid** of ~250,000 shutters.
- Capable of simultaneous observation of up to ~100-200 sources in a field.
- Flexibility to accommodate different scenes.
Manual planning of efficient observations will be difficult

- The MSA is a **fixed grid**. (There are bars between shutters where one should avoid placing targets.)

- It has a **variety of failed shutters** which inevitably occur during fabrication and testing: stuck open, stuck closed, shorted rows and columns...

- Optical distortions

- Spectral wavelength gap due to gap between the 2 detectors.

An area of ~ 10% of the MSA’s 250,000 shutters
User Inputs: Dithers and Number of Configurations

Users choose the number and size of dithers.

For this dither pattern, 9 configurations would give 3 sets of targets.

The larger the dither, the greater the effect of distortions over the field of view. Dithers large enough to require the use of the flexible dither algorithm tend to result in a decrease in the number of primary sources observed.

Users choose the number of configurations, produced by the plan.
User Inputs: Shutter Margin

Users choose how restrictive the shutter margin is.

Location in shutter affects throughput and accuracy in throughput correction. Restricting the location of the source in the shutter affects multiplexing.
Plan Assessment Tools