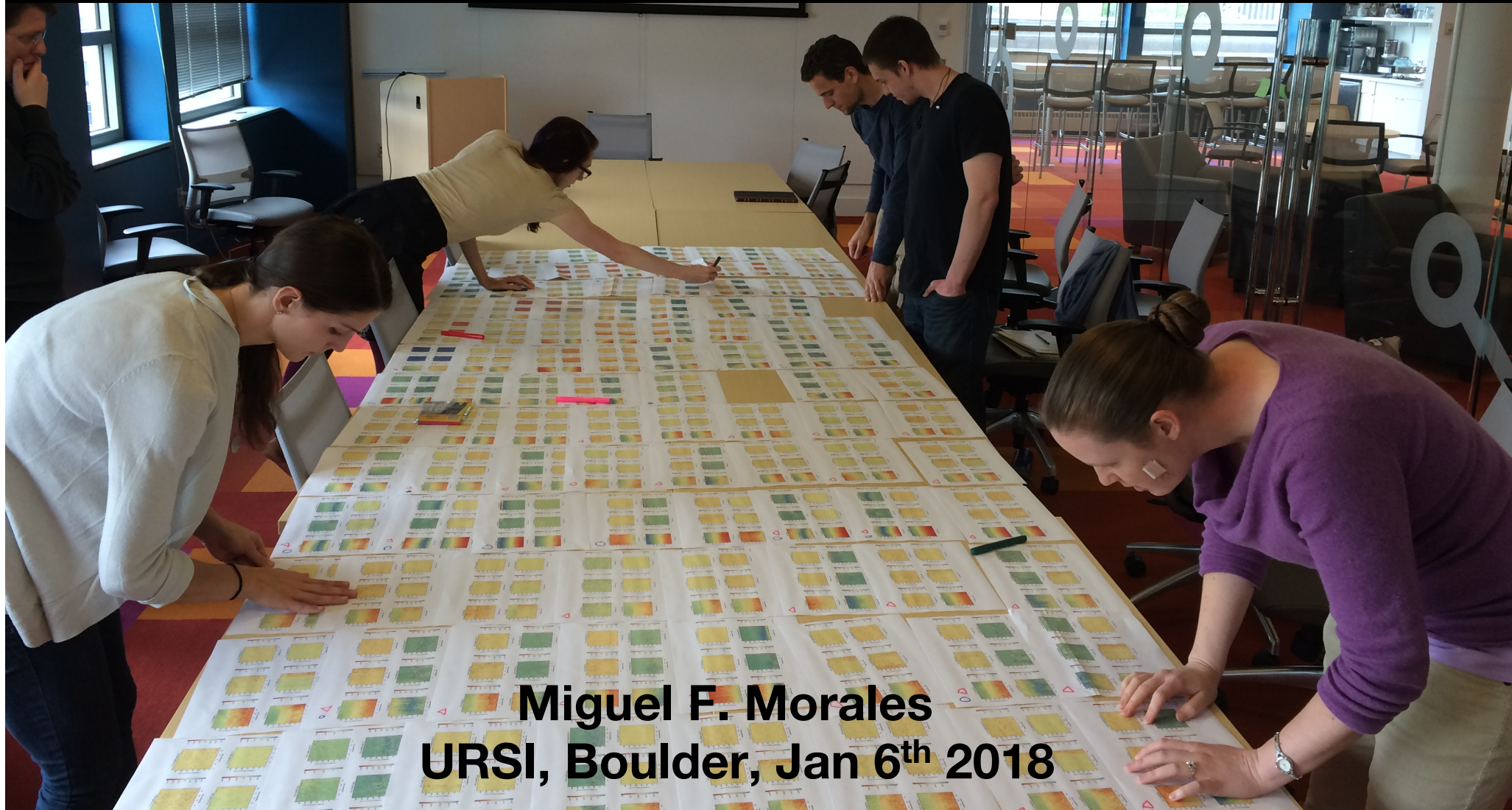
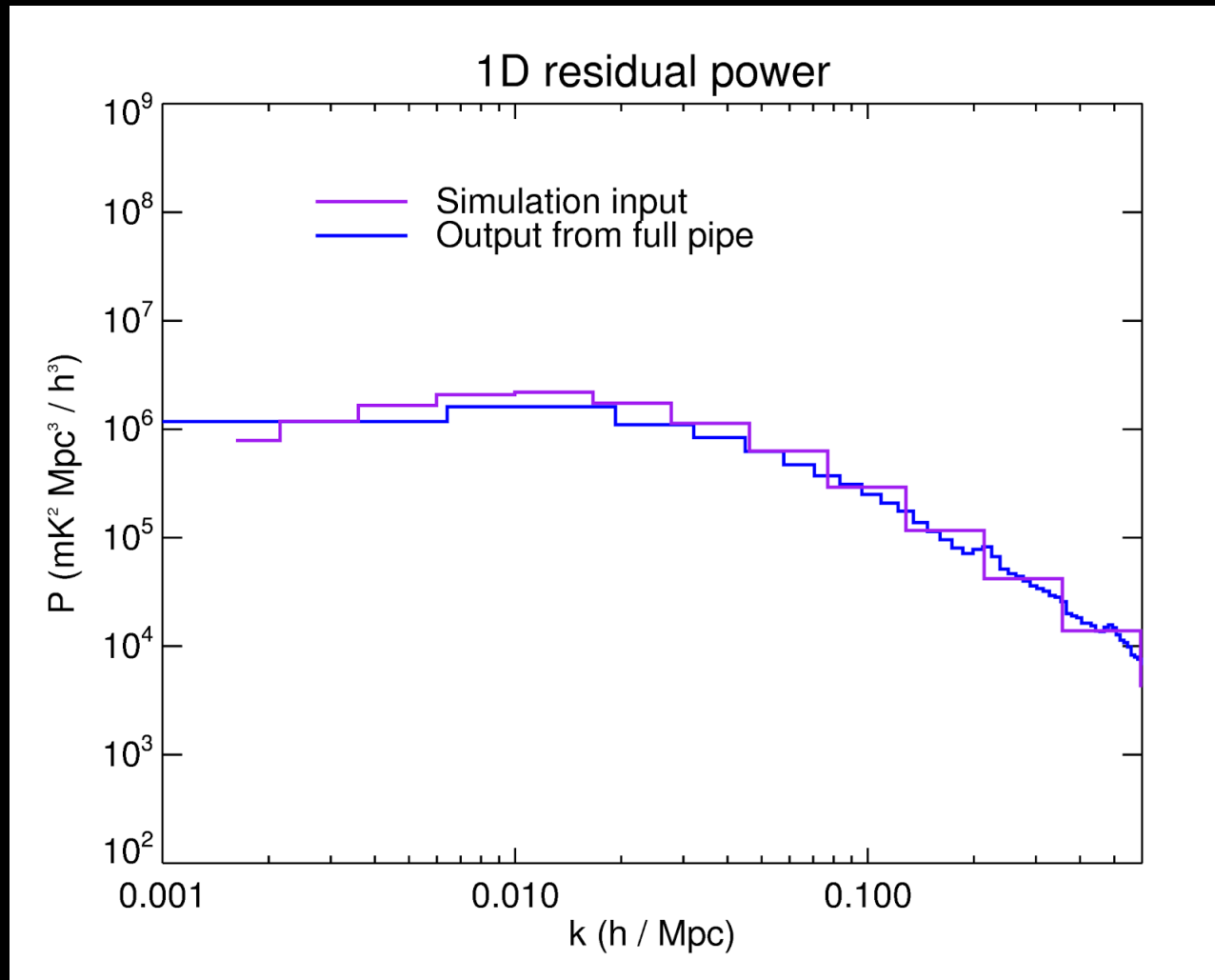


# Building Confidence in EoR Limits



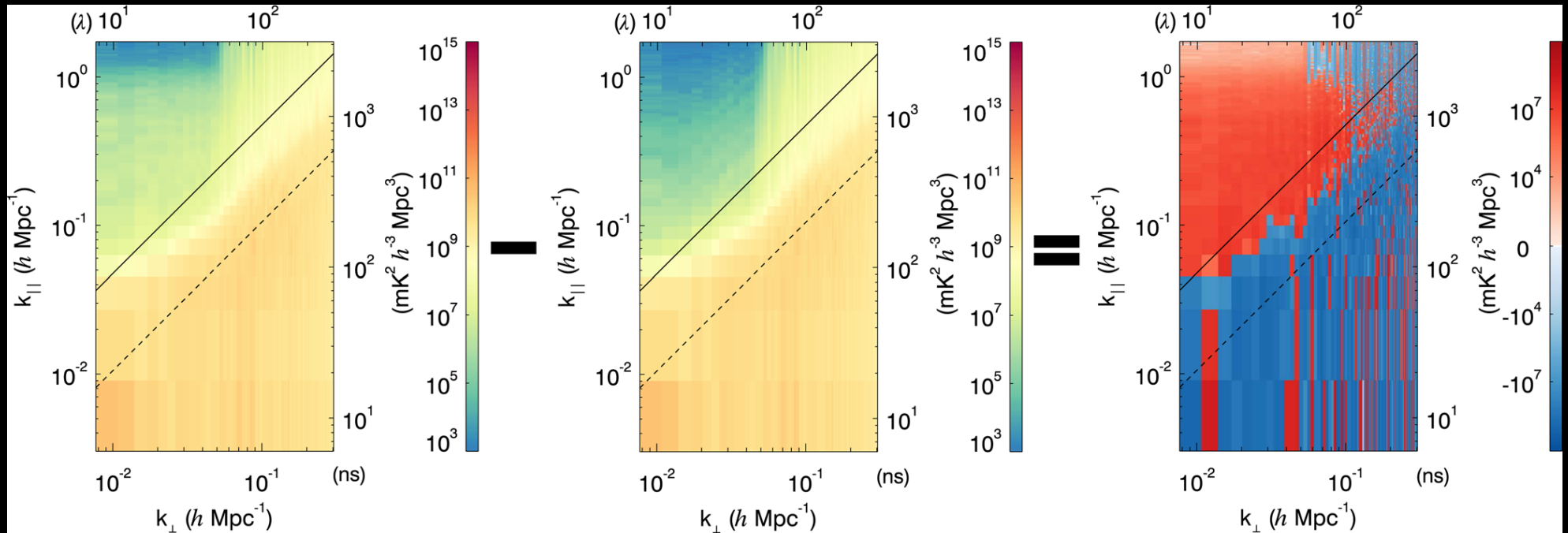
**Miguel F. Morales**  
**URSI, Boulder, Jan 6<sup>th</sup> 2018**

# End-to-end simulation: signal loss

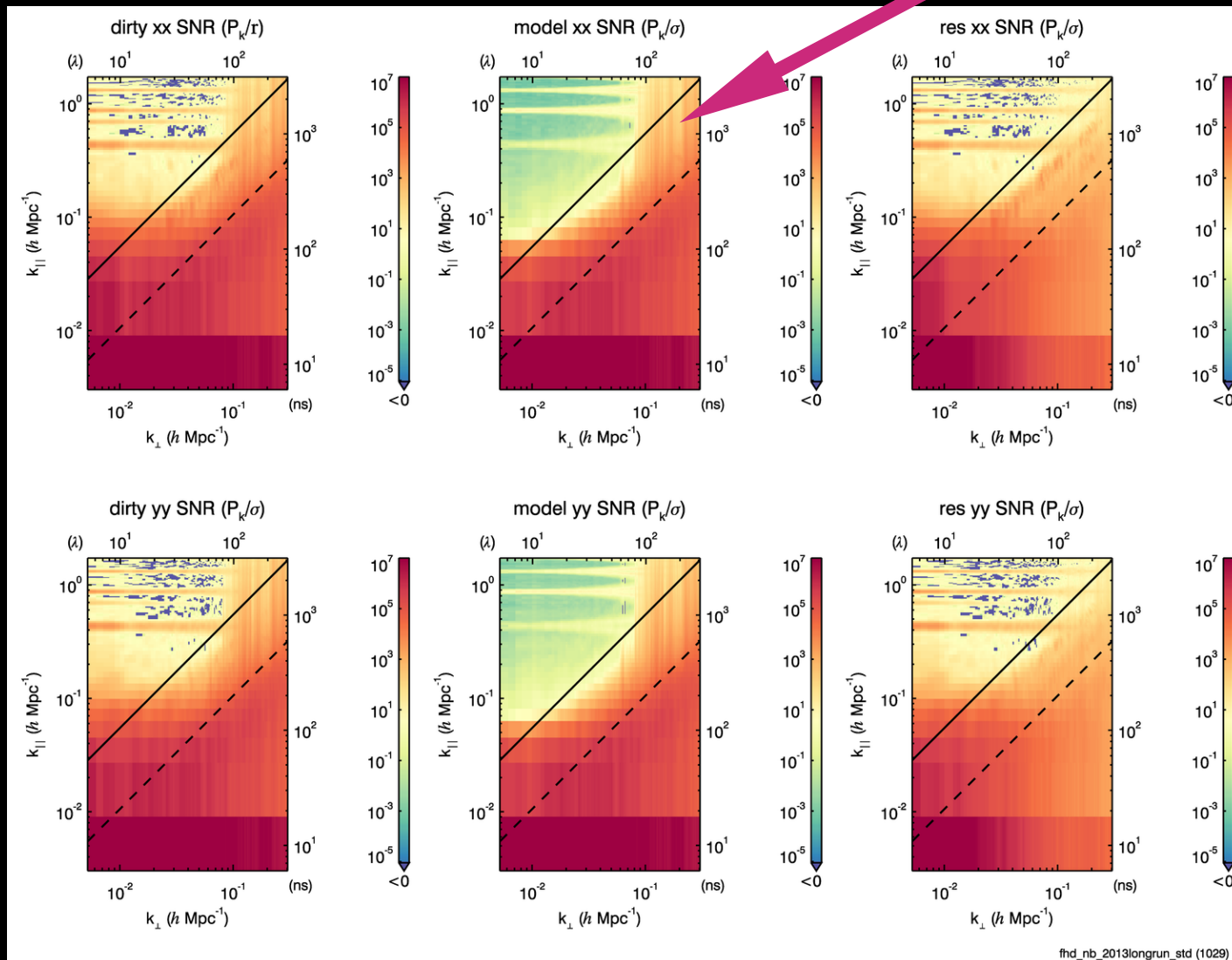




# Including calibration with incomplete sky models

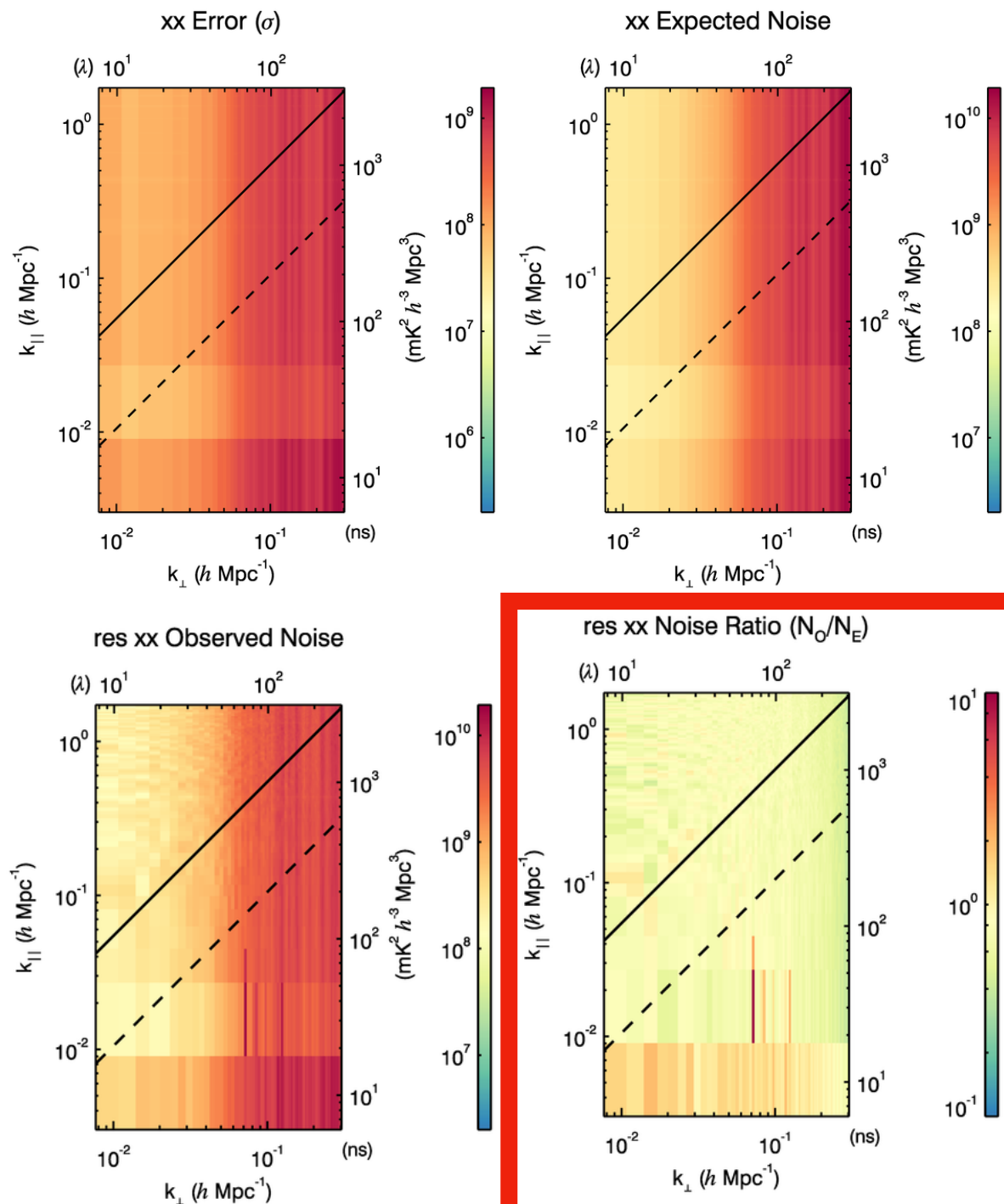


# Matched observation 'simulation'

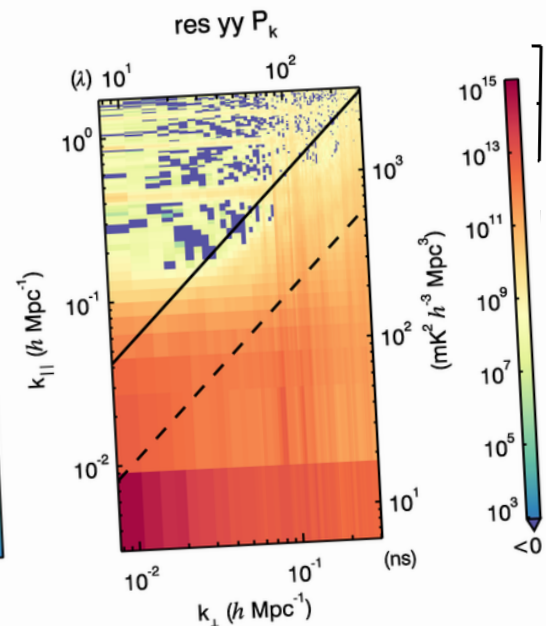
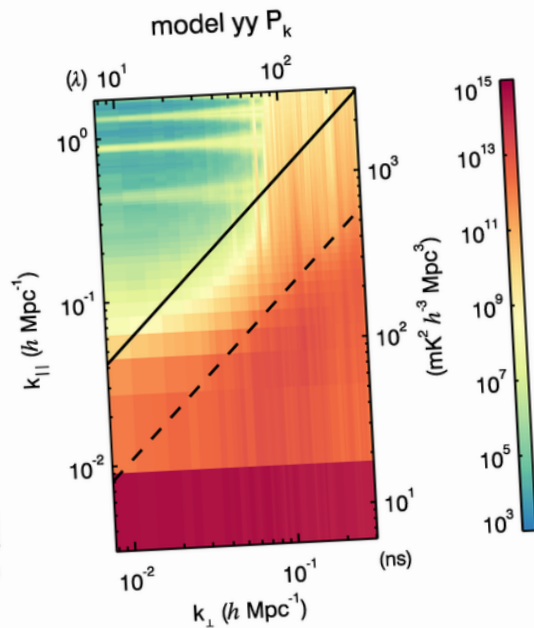
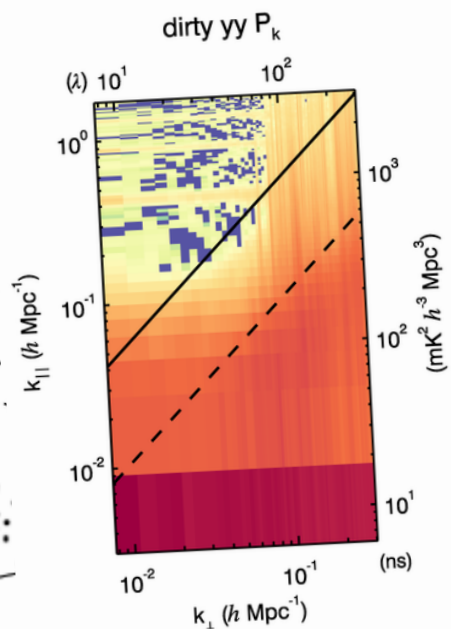
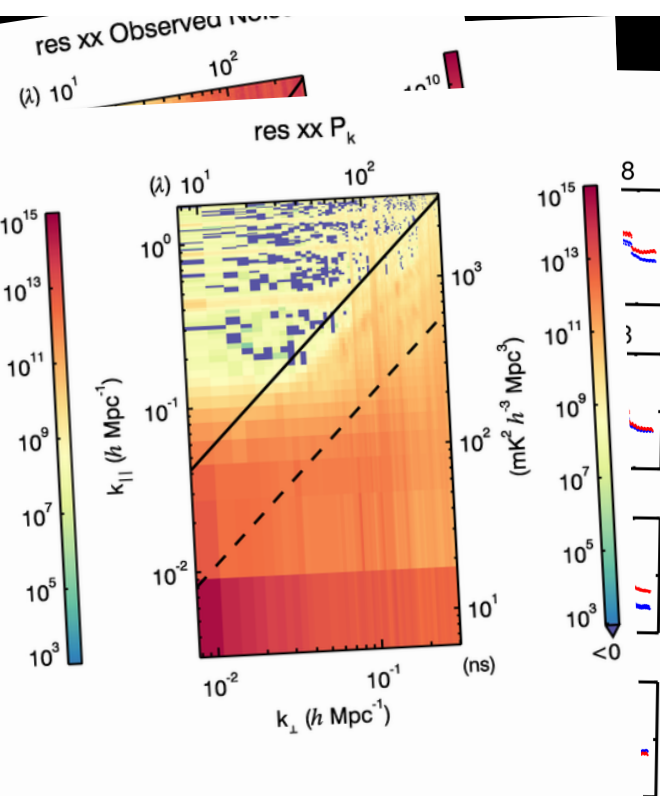
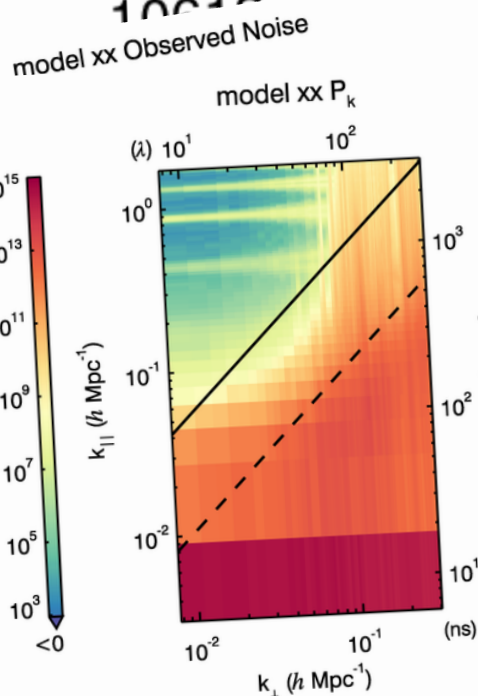
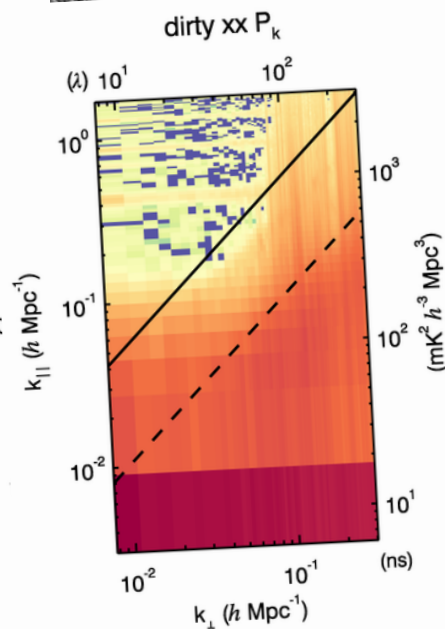


# End-to-end error propagation

2





























# Analysis traceability

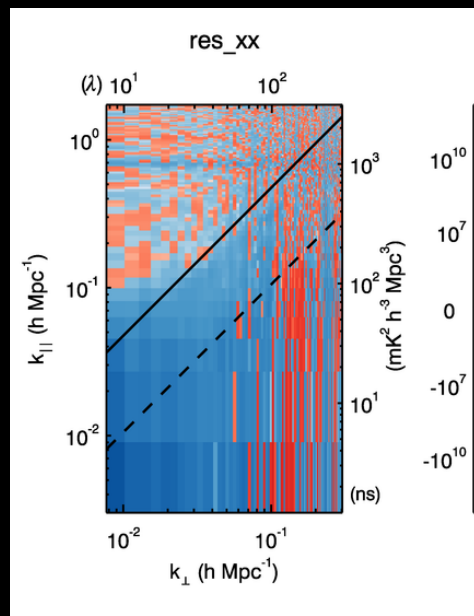


# Data unit tests

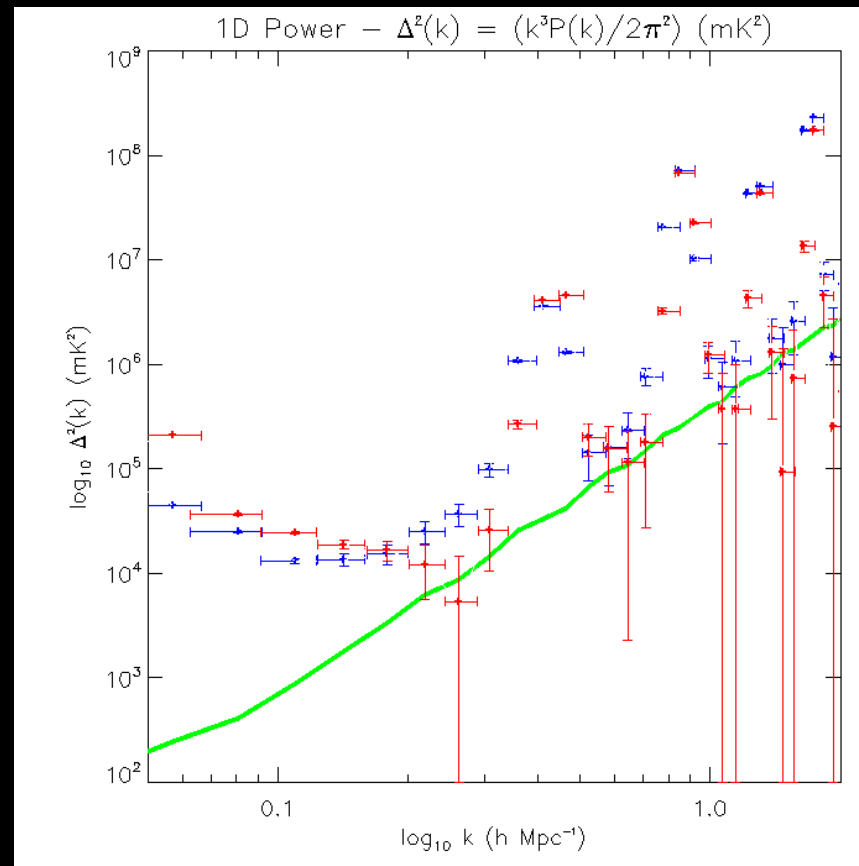
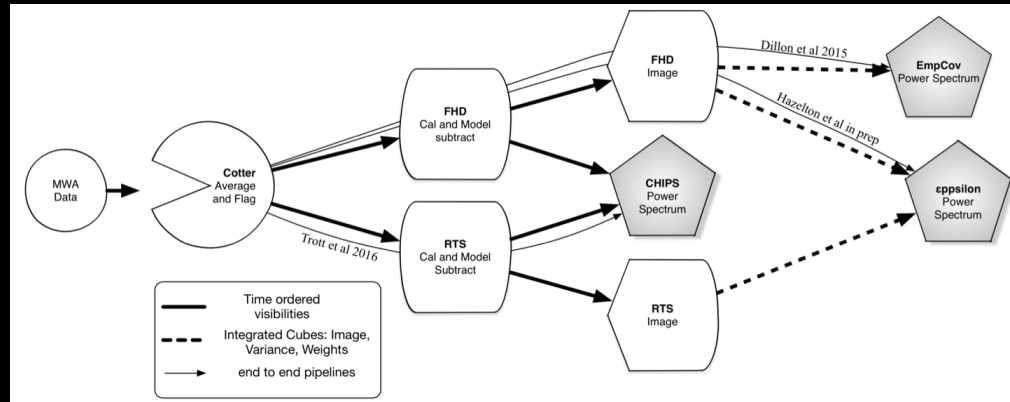


```
2 fnd_core/fnd_struct_init_antenna.pro View
@@ -86,7 +86,7 @@ dec_use=dec_arr[valid_i]

86 86
87 87 ;NOTE: Eq2Hor REQUIRES Jdate to have the same number of elements as RA and Dec for precession!!
88 88 ;;NOTE: The NEW Eq2Hor REQUIRES Jdate to be a scalar! They created a new bug when they fixed the old one
89 -Eq2Hor,ra_use,dec_use,Jdate,alt_arr1,az_arr1,lat=obs.lat,lon=obs.lon,alt=obs.alt,precess=1
89 +Eq2Hor,ra_use,dec_use,Jdate,alt_arr1,az_arr1,lat=obs.lat,lon=obs.lon,alt=obs.alt,precess=1,/nutate
90 90 za_arr=fltarr(psf_image_dim,psf_image_dim)+90. & za_arr[valid_i]=90.-alt_arr1
91 91 az_arr=fltarr(psf_image_dim,psf_image_dim) & az_arr[valid_i]=az_arr1
92 92
```



# Parallel pipelines

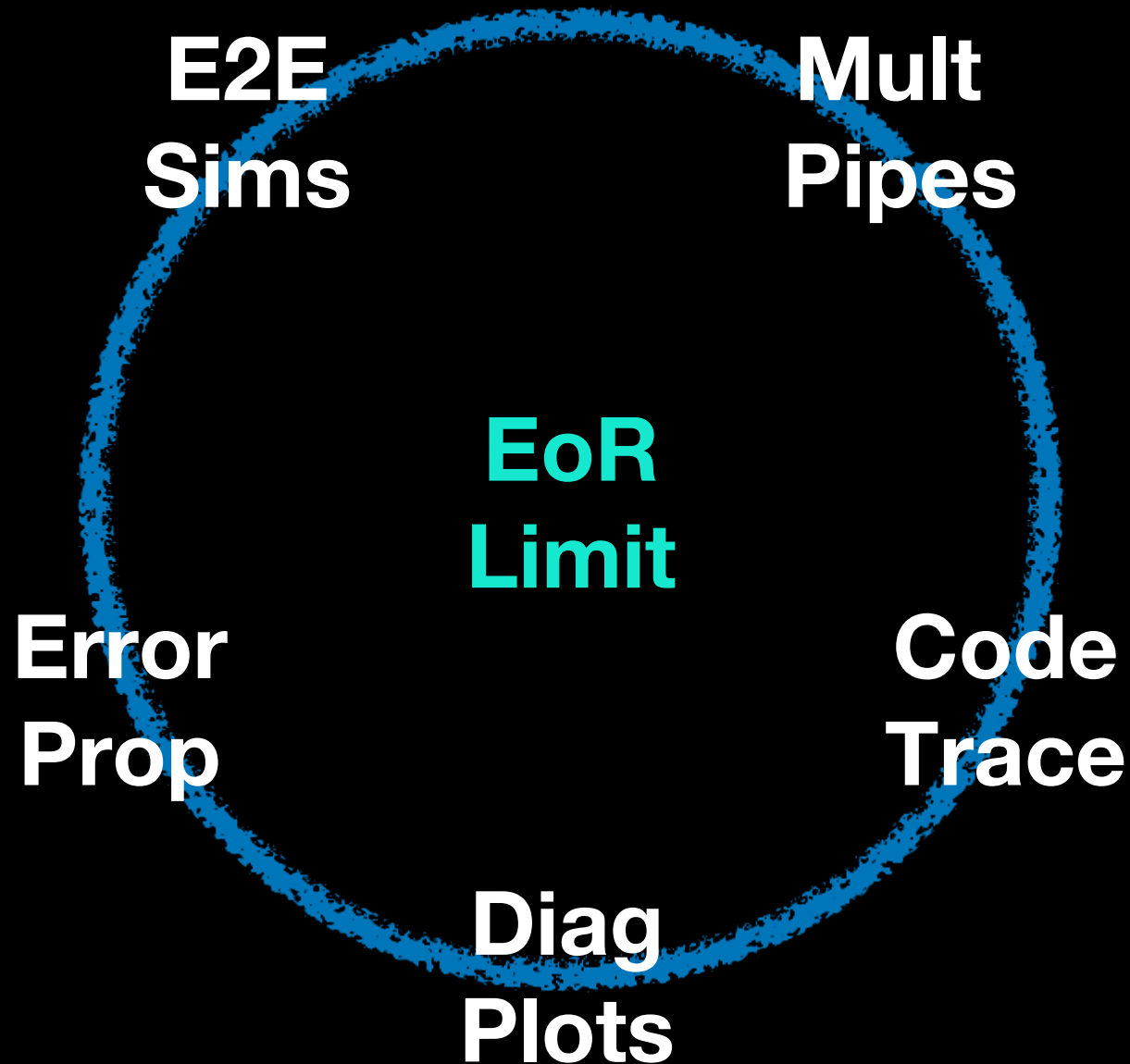


Jacobs et al. 2016

Trott



# Protecting a limit



# If you're interested in our techniques...

- All code is freely available: <https://github.com/EoRImaging>
- email me about our FHD/eppsiilon workshop in 2018  
[miguelfm@uw.edu](mailto:miguelfm@uw.edu)



# Building Confidence in EoR Limits

- End-to-end simulations (including calibration with incomplete sky models)
- Error propagation
- Diagnostic plots
- Software traceability
- Parallel pipelines