From Jeff 7/15/20 -

in NCP summary its not clear whether the final sensitivity is 10 mK or 0.5 mK.
both numbers are mentioned, but I was unsure which to focus on.

Is this close to the expected signal?

Albert's response -

Hi Jeff!

I concur that this summary subsection might be confusing and really should be written better.

I think one point of the paper is meant to emphasize that the fluctuation noise we measure is very well approximated by the radiometer equation with the measured system temperatures ~70K. This is what is relevant to how accurately one could measure the foregrounds. The quantity we quote is the noise per pixel in the visibilities of each baseline separately and it depends on the size of the pixels in time and frequency which is one reason "system temperature" like quantities are nice to mention since they don't depend on the size of the pixels.

Eventually one should translate that into an effective noise temperature per pixel in a sky map. This quantity depends on how one combines the beams to make the map. The noise matrix produced by map making is a complicated object as map making introduces correlations in noise between widely separated pixels - this sort of analysis is not within the scope of this paper.

The 0.5mK number is the excess noise after foreground removal by hi-pass filtering the spectrum. This is more relevant to 21cm emission. Of course one cannot make a map merely from a measure of excess power - though one could estimate a power spectrum (a la COBE DMR). This excess power is probably not from the sky (though we haven't proved that) and it might be dominantly RFI. The point here is how well we have been able to remove the signal from smooth spectrum illumination (e.g. foreground radio emission). In power (temperature squared) we have subtracted the signal to at least the -30dB level in 10 days of observation.

In any case it is larger than the expected 21cm signal one expects at the wavenumbers probed.

Albert