This work discusses a polarization correction scheme for GEMS to reduce the impact of the instrument's polarization sensitivity on the observed radiance by illustrating its impacts on synthetic data. The revised manuscript clarifies many of the concepts and provides a more thorough discussion on future work towards maturing this capability. Please address the few remaining points of clarifications and minor technical errors:

- Line 33: – Please change to "...radiance spectrum can include a polarization error of 2%"
- 70: "fractional polarization of atmosphere" isn't a generally well-known quantity. It may be worth defining in terms of the Stokes parameters (½(1-Q/I))
- 83: Remove "may"
- 96: Change "of LUT" to "in the LUT"
- 136: Please clarify. I think you are trying to say that the measurements were done at the nadir position because the signal was lower at off-nadir positions. Is that correct? Depending on your confidence in the models, perhaps the authors would consider mentioning the PS angular variability predictions to give a sense of the order of magnitude of these variations (without including the plots).
- 150: This description is a little unclear. Perhaps something like "...radiance response is non-uniform across wavelength due to the non-uniform PF spectrum, which can lead to degraded performance." (I believe you are missing a word, possibly "degraded", here.)
- 160: The details that were added to this section are helpful. However, could you clarify why so many transforms are needed to get from the instrument GEMS reference frame to the GEMS boresight?
- 234: "and enable" to "enabling"
- 385: Perhaps "raggedness points" is not a common descriptive term either. I recommend "spectral features" instead.