The manuscript presents an application of NH3 emission inversion using CrIS satellite observations and two different methods. The effects of the two methods are compared and validated with independent in situ data. The methodology is clear and the methods are well described. The results show an improvement in the model performance after the emission inversion (and concentration estimation in the case of the LETKF). The results are well explained, and the discussion and conclusions are in agreement with the data displays. I recommend the publication of the manuscript.