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Assessing whether soil moisture content (SMC) can be estimated for wetlands in the grassland biome of South Africa using freely available space-borne sensors

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Dear Examiners

Thank you for reviewing my Masters thesis titled, “Assessing whether Soil Moisture Content (SMC) can be estimated for wetlands in the grassland biome of South Africa, using freely available space-borne sensors” and providing suggestions and feedback for the improvement thereof.

Please find the table below which includes the response to suggestions and comments provided by the examiners

Sincerely,



Ridhwannah Gangat

1814325

Comment	Addressed
On line 28 of the abstract, please add the word 'in' ...higher ranges of SMC (≥ 50 %)	Done
The thesis contains 2 study area sections, one in the introduction and the other in the methods. I would suggest that these sections be condensed into one section and full description is given in the introduction together with the study area map	I have left the sections as is because section 1.4 in the introduction provides a brief and general context as to why monitoring soil moisture content in the palustrine wetlands in the grassland biome of South Africa is important and why we chose that study area. This supports the aims and objectives. Whereas under sections 3 a full description and a little of the history is explained.
Page 9 of motivation section, the first sentence does not make sense as the decline in the extent should be from 71% to 64% and not the other way round. This must be corrected	Done: I have corrected this by swapping the two extents, therefore instead of reading as 71% to 64%, it now reads a 64% to 71%.
Page 12, the thesis outline, add a full stop on line 5 SMC.	Done
Page 20, Paragraph 1, line 8, it should be monitor and not monitoring	Done
Page 24, paragraph 1, line 11, Because **of** the dielectric...	Done
Page 25, paragraph 2, put a full stop at the end of the paragraph.	Done
Page 29, paragraph 2, line 3, Add a full stop at the end of the sentence... passive and active.	Done
Page 34, paragraph 1, the first sentence leading from page 33 does not make sense, please reword	Done: I have reworded the sentence to read better by adding in the full dates on which the Sentinel sensors were launched.
In the annotated report, the examiner asked for a better quality map	I have kept the image because this is a Sentinel 2

	image that was downloaded. Other images such as google images or Landsat that were previously tested added no value to the contrast in for e.g. roads or buildings.
Page 37, paragraph 3, line 4-5, remove the full stop at the end of the sentence as it continues to the next sentence... (DEA, 2015)**.** Near the koedoespoort railway...	Done
Page 41, paragraph 2, line 11...pixels and is to allow (not making sense)	Done: I have reworded the sentence by adding a full stop after 'pixels' and the next sentence which start at, 'The higher spatial resolution….' Explains why resampling 20 m to 10 m was carried out.
Page 45, paragraph 2, line 7, reword line 7...use only a fixed number of input variables can be (not making sense)	Done: I have reworded the sentence so that message is clearer: 'but they use only a fixed number of input variables and thus can only be used if the data is assumed to be normally distributed.'
Page 56, paragraph 1, line 4, remove the word **while,** lower range of soil moisture, ~~while~~ less	Done
Page 65, last paragraph, line 5...(VV) (R^2 = 0.7; RMSE = 16), the result table shows **different** values for VV: (R^2 = 0.92; RMSE = 10 for S1B and R^2 = 0.76; RMSE = 17 for S1A), please correct these values on the sentence.	Done: I included the results (R2; RMSE) or each sensor Sentinl-1A, Sentinel-1B and Sntinel-2A, Sentinel-2B, making it less confusing for the reader; whereas the previous version of the

	Masters dissertation only included the results for two sensors
Page 67, paragraph 1, line 3-4, you mention the data split outperformed the cross-validation, however the results table indicate contrary to this as the cross validation performed better, please correct this paragraph.	Corrected: I have corrected the statement by rewording the paragraph and explaining that although in certain cases the results show cross-validation to produce better results, generally data-split performed better in more cases than cross-validation.
Page 67, last paragraph, line 8, remove the full stop after the word small as the sentence continues.	Done
The page numbers of the thesis was not added and this will have to be added	Done