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Interactive comment on "SegCloud: a novel cloud image segmentation model using deep Convolutional Neural Network for ground-based all-sky-view camera observation" *by* Wanyi Xie et al.

Anonymous Referee #3

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This study proposed a novel deep CNN model named SegCloud and applied it to accurate cloud image segmentation. The segmentation results demonstrate that the SegCloud model is effective and accurate. It also demonstrated that SegCloud outperformed the traditional methods significantly. In principle, this is an interesting study with a new method useful for the science community. I would suggest its publication after necessary changes.

General comment: Significant efforts are needed for improvement of English writing.

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Discussion paper

Detail comments: Page 1: Line 29-31, one more reference could be added, Yang et al. (2017, doi:10.1002/2016JD025954), which shows the application of ground-based cloud observation for evaluating satellite-based observations. Line 32-34, "are used to detect clouds". Also, one more references could be added, Yang et al. (2018, doi: 10.1016/j.atmosres.2017.11.021). Page 2: Line 3-5, "... for recent years". Line 7-9, I am a little confused with this sentence. I understand that the aerosol particles along with some small cloud droplets follows Mie scattering. However, for air molecules, they generally follow Rayleigh scattering. Line 13, "treated" Line 14-15, this seems not a complete sentence. Line 21-23, "technology" -> "technologies". Also, this sentence seems with grammar error. Line 26-27, "is" -> "was" Page 3 Line 31, where is description for Fig. 1(a)? Page 4: Line 4-5, where is description for Fig. 2 (a)and (b)? Page 5 Line 7, "accepts" Line 9, "are" ->"is" Line 27-29, "are the locations", Line 30, "ensure effectively to restore ..." Line 32, "achieve ... cost ..."? Page 6 Line 13, "is"->"are" Line 14, the last sentence seems not a complete sentence. Line 17-20, please modify the description to make them more concise. Page 7 Line 7, "a series of ..." Lines 23-27, the performs are great. However, if you could provide some explanations or discussions regarding those that are not accurately classified, it would be more useful. Page 8 Line 7, why do you only provide "some representative segmentation results"? How do you make the choice of "some", subjectively or objectively? Line 7, "poorly" -> "poor" Line 13-14, do you mean "more excellent"/"more accurate"?