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Earth System Science Data Discussions

Interactive comment on "A dataset of 30-meter annual vegetation phenology indicators (1985–2015) in urban areas of the conterminous United States" *by* Xuecao Li et al.

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Li and coauthors produced a 30-meter phenology dataset using Google earth engine based Landsat images, and a double logistic model. The study is timely and important. The fine-resolution phenology dataset is valuable, and provide an avenue on the urban phenology study since its high importance in public health, i.e. pollen allergy diseases, as well as urban ecosystem response to future climate warming. I would thus like to recommend to publish this nice study in the ESSD. Below, please find some suggestions that I hope can be help to improve the MS.

first, the authors argued that the logistic model is valuable to capture the trends of

green-up and senescence by using the pair-parameters, but the description is weaker, please specify or update this. In addition, the half-maximum criterion was used to extract the sos and eos, but the more popular method is using the maximum change rate. Different methods might generate different results, see the figure 10, between the modis evi and MCD12Q2, and large difference was obtained. I do not say the half-maximum is wrong, but the authors should address this issue in the discussion, and remind the reader to cite the method when using the dataset.

second, the Landsat phenology dataset was compared with in situ phenology data, including both phenoCam and ground observations, and I found the authors overestimated the results, i.e. a good agreement between these datasets. See the figure 6 and 7, the difference between Landsat and phenoCam is even larger than 20 days, i.e. RMSEs, for both SOS and EOS. Actually, I do not expect a high agreement, due to the forest structure and the difference of scale between Landsat (30m) and in situ observations (500m for PhenoCam). So, I would suggest to update the descriptions of these comparisons, and highlight the scale issues between the Landsat and PhenoCam and ground dataset.

some minor comments,

page 5, line 15, the physical meaning of parameter is related to vegetation growth and senescnece, please specify;

page 6, line 10-15, why the half-maximum criterion is likely to produce the sos and eos when leaves are likely to emerge? remove this argument or update;

page 7, 4.1 section, the authors argued the urban-rural gradient, but in the following the forest was presented as example. better remove this gradient arguments;

page 8, the argument in line 6, i.e. a good agreement with in-situ phenocam results, is in conflict with the line 15, i.e. the agreement is relatively weaker.. please improve these arguments;

fig3, specify GLP in the legend;

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