https://e-sensing.github.io/sitsbook/uncertainty-and-active-learning.html

- “Active learning for remote sensing data classification is an iterative process of sample selection, labeling, and model retraining.” => Suggestion: remove “for remote sensing data classification” as this definition also holds for non-remote-sensing data. (+ it is repeated in the next sentence)
- “`sits_uncertainty()`, `sits_uncertainty_sampling()`, and `sits_confidence_sampling()`.” => sits_confidence_sampling() is not described in this chapter. Add a small description or remove it from here.
- “These can occur when the classification algorithm misinterprets the spectral or spatial characteristics of the input data, leading to the misclassification of land classes.” => Suggestion: “spectral, spatial, or temporal characteristics” as we are dealing with sequences of images.
- Regarding the entropy computation, the formula is presented at the pixel level, but the last paragraph of the section introduces two parameters `window_size` and `window_fn`, which have not been described before. This was confusing to me.
- “is the version of result” => “of the result” OR “the result version”.
- “leading to a social and cultural disruption” => leading to social […]
- “The study area is close to […]” => adding a reference at the end of the paragraph?
- “post-processed by a Bayesian smoothing” => by Bayesian smoothing
- “`n`, number of uncertain points to be included; `min_uncert`, minimum value of uncertainty for pixels to be included in the list; and `sampling_window`, to improve the spatial distribution of the new samples by avoiding points in the same neighborhood to be included.” => Suggestion [in bold]: `n`, **the** number of uncertain points to be included; `min_uncert`, **the** minimum value of uncertainty for pixels to be included in the list; and `sampling_window` **defines a window in which only one sample will be selected, it helps improve** the spatial distribution of the new samples by avoiding points in the same neighborhood to be included.
- “Thus, we o designate these samples as Wetlands” => extra ‘o’
- “There are still some confusion areas” => “some areas of confusion”

https://e-sensing.github.io/sitsbook/ensemble-prediction-from-multiple-models.html

- In what follows, we will use the same data used in Chapter Image classification in data cubes to illustrate how to produce an ensemble prediction. For simplicity, we repeat the steps taken to classify an image in that Chapter: create a data cube, train a model using the lightweight temporal attention encoder algorithm (`sits_lighttae()`), then classify, post-process, and label the data cube. As a starting point, we plot two instances of the data cube at the start and end of the time series.

=> I think this is inaccurate as the next code cell display only one image, and then the classification framework is used below but with TempCNN, not LTAE. Probably replacing “the lightweight temporal attention encoder algorithm (`sits_lighttae()`)” with “the TempCNN model (sits_tempcn())” would be enough.

- “in the right-hand corner of the image” => in the bottom right-hand corner
- “as degraded forest “=> forests OR forest areas
- “Only those places where the random forest has high confidence have been included.”. => I think it should be reformulated. For a 2-class problem, if RF predicts [0.7, 0.3] and TempCNN [0.2,0.8], the average (as used in the example) will output [0.45,0.55] and thus predicts class 2 although RF has a low confidence for this class.

https://e-sensing.github.io/sitsbook/object-based-time-series-image-analysis.html

- The general sequence of the processes involved in OBIA include => includes
- “The aim here is to create objects that represent meaningful features in the real world, like buildings, roads, fields, forests, and water bodies.”

=> I partially agree as I consider super-pixel strategy as OBIA (e.g., SLIC or SNIC) while they do not represent meaningful features.
Suggestion: “The aim here is to create objects that represent meaningful features in the real world, like buildings, roads, fields, forests, and water bodies; and/or reduce the memory footprint by determining a new simplified representation of a satellite image time series.”
Similar note for “One of the advantages of OBIA is that it more closely mimics the way humans visually perceive their environment, not by individual pixels, but by groups of pixels as meaningful objects.”
EDIT: it is even more important as for now only SLIC (super-pixel strategy) is available

- “in more accurate and contextually rich analysis” => in a more OR analyses
- “Then, for each segment, we use an aggregation function to obtain a set of spectral attributes for each segment.” => repetition of “for each segment”. Suggestion: remove the first one
- “The result are a set of time series” => is
- “We call this process “OBIA-TS” (object-based image time series analysis)” => missing final stop
- “and function that performs” => and a function
- “other params to be passed to segmentation function” => to the segmentation function
- “In `sits` version 1.4.2, there is only one segmentation function available that implements the Simple Linear Iterative Clustering (SLIC) algorithm, which is described below.”> Suggestion: “In `sits` version 1.4.2, only one segmentation function is available. It implements the Simple Linear Iterative Clustering (SLIC) algorithm, which is described below.”
- “After all pixels” => Once all pixels
- “capture the to boundaries of objects within the image” => remove “to”
- “function to calculate a value of each superpixel” => to calculate the feature value of each superpixel
- `step` => I don’t understand the definition.
- “`minarea`: minimal size of the output superpixels (measured in number of cells).” => I found it not super clear. Is it the desired number of superpixels or the average superpixel size measured in pixels? The second option is quite popular in SLIC implementation
- In the code snapshot, the parameter “iter” is used but not described below. Suggestion: add it when presenting the hyperparameter of the SLIC algorithm
- “Using the samples, we can now obtain a machine learning model and apply it to classify the time series associated to the segments.” => we can now train […] associated with
- “The result of the classification is time series tibble” => “is a time series tiblle” (I can’t remember if “tibble” was introduced in the previous chapters. If not, maybe consider to replace with data frame.)
- “with the probabilities associated to each class” => associated with
- Last visualisation: it should be described further (it seems some segments are not labelled)

Thoughts: The chapter is very well-written with a very comprehensive overview of the SLIC algorithm. One thing that I think is missing is the use of the avg_fn hyperparameter (of the sits_supercells() function). It is common to use at least the average and the standard deviation of the values for each segment and in each spectral bands.
A possible next step is to show the extraction of simple temporal features: maximum of NDVI, dates of when occur the maximum of NDVI, etc. Not sure how this would be complicated.