

In this study I will test the impact of the training design on the prediction and AOA for a small scale classification of trees, grass and soil for a high resolution RGB image at the upper alpine treeline. I assume that very small training areas would deliver less information and result in inaccurate predictions but greater training areas would catch too many values from other classes which would reduce the performance too. So I hypothesize that increasing sizes of training areas will first result in increased performances for the predictions but decreasing performance after a maximum is reached. With the AOA highly depending on the values and its distribution I assume that more data could result in lesser AOA. Therefore I hypothesize that increasing sizes for the training areas lead to decreasing AOA.

Besides the original RGB data I will compute a Raster Stack of several artificially layers to compare the performance and processing time. The Raster Stack will include spatial filter, spectral indices and PCA. For dimensional reduction I will drop highly correlation layers and use a FFS to select the best fitting layers. I assume that the performance will be higher compared to the use of only RGB bands but would take more time to proceed.

For validation strategy I will use three sets of training points estimating that each set will have the highest performance with the same training design and further have only minimal differences compared to each other.