

## ***Interactive comment on “Comparison of machine learning classification algorithms for land cover change in a coastal area affected by the 2010 Earthquake and Tsunami in Chile” by Matias I. Volke and Rodrigo Abarca-Del-Rio***

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we are very grateful for the referee recommendations. It allowed us to learn and test new methodologies. We were quite curious about implementing Extreme Gradient Boosting (XGB, it has received much attention lately) and Deep Neural Network (DNN). Both have been used mostly in data science and only recently proven to work in remote sensing.

In total, the new version of the manuscript, we investigate 6 new algorithms, over a total

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of 8 algorithms. K-Nearest Neighbor (KNN), Multivariate Adaptive Regression Spline (MARS), Gradient Boosting Machine (GBM), Support Vector Machine (SVM), Random Forest (RF), Extreme Gradient Boosting (XGB), Deep Neural Network (DNN), and one parametric algorithm Naïve Bayes (a Maximum Likelihood variant). Gradient boosting machine (GBM) was chosen because it belongs to a boosting algorithms family of as well as XGB. Therefore, we could also investigate the performance comparison between the classic boosting machine model and its new implementation. We selected others in consideration of the literature and the success they had had in various remote sensing experiences. Thus, the SVM, RF, and KNN methods were selected after outstanding results showing their reliability for satellite image classification. MARS was one of the most successful (and mysterious) algorithms in previous decades. To compare the precision differences of the non-parametric ML algorithms with the standard parametric methodologies such as the Maximum Likelihood, we selected the NB algorithm.

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