

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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Thanking you for your comment, which prompted us to investigate the performance of more classifiers. In a new version of manuscript, we investigate 6 new algorithms, over a total 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).

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In order to compare the precision differences of the non-parametric ML algorithms with the classic parametric methodologies such as Maximum Likelihood, the NB algorithm was selected. The algorithms were chosen on reviewers recommendation, as is the case with Extreme Gradient Boosting (XGB) and Deep Neural Network (DNN), but also selected in consideration of the literature and the success they had had in various remote sensing experiences. Gradient boosting machine (GBM) was chosen, mainly because belongs to a family of boosting algorithms as well as XGB. Therefore, we will have a performance comparison between a classic boosting machine model and a new implementation of it. SVM, RF and KNN were selected because there are important results that show their reliability for the classification of satellite images, so they are a good comparative scale in accuracy for the new families of classification algorithms. MARS was one of the most successful algorithms in previous decades. However aside the historical point it has a shorter kernel, but more adjusted than the others, that's why we thought it would be interesting to attach it.

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