Abstract

Due to the great amount of information collected at a low cost, the harvest mapping has been the development key for Precision Agriculture. However, mistakes can happen in this process. The main of them, the time delay, is described as the time spent among the cut of the plant by the bar of the platform and the passage of the grain for the sensor of productivity, and the correlation of this flow with the correct position of the combine when the culture was harvested. The spatial dependence analysis by the best adjustment semivariogram method and their parameters determined the best time delay. The variance of nugget effect measures the small amount variation in a group of space data. Dependence between the nugget effect and the time delay can be supposed. Thus, the variation of the nugget effect should be minimized with the true time delay. For the semivariogram analysis, the data of moisture productivity, moisture and elevation were divided in 12 sub-areas and each area had the determined time delay, varying from 3 to 27 second for moisture productivity and moisture and from 0 to 3 seconds for elevation. The best adjustment semivariogram method to determine the time delay was satisfactory, in spite of the atypical conditions, that is, high natural variability of the data for the three factors, proving changes of the time delay in a small area.

Keywords

Monitored harvest, time delay, precision agriculture.