



GBS 1982-1999 time series. A quantitative analysis of the effects of the GAC systematic sampling

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AVHRR-GAC data are samplings of full resolution data (AVHRR-LAC 1.1 km). From this point of view, AVHRR-GAC data should be considered as 4/15 systematic samplings of AVHRR-LAC data.

The aim of this work is to analyse the quantitative and qualitative impact of this sampling strategy on the Global Burned Surfaces (GBS 1982-199) time series through a simulation using the Global Burned Areas (GBA)-2000 burned surface product. In this paper, we have applied a GAC systematic sampling to the GBA-2000 product in order to analyse the effect of the sampling into GBS product. The results of this analysis proved that even if GAC samplings are representatives of the full resolution data (more than 98% of the variability of the data set is explained), these data should not be considered for quantitative estimations. Effectively, GAC samplings preserve quantitatively at most 56% of the full resolution information. Therefore, the results obtained proved a biased by both a sampling and averaging scheme from a quantitative point of view, and thus GBS-time series product can only be considered as the representation of the larger burnt areas and not as a quantitative estimation of the fire activity phenomenon.

An analysis of the spatial distribution of the errors showed a latitudinal influence. This one is certainly closed to the land-cover distribution by latitudes and the spatial variability of the fire activity. Therefore, since errors are almost homogeneously distributed in all latitudes, some ranges of them seem to be more sensible to the spatial distribution of the fire activity.