

ABSTRACT ONLY**EVALUATION OF THE AUTOBOL
ALGORITHM WITHH A SAMPLE OF EVENTS
DETECTED BY THE BOCOSUR NETWORK IN
URUGUAY**

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BOCOSUR is a network of 20 stations deployed in Uruguay to detect fireballs (meteors brighter than Venus). Autobol is a machine learning-based algorithm that is capable of processing images and detecting events from a series of videos. The learning process of the algorithm begins with a manual classification of videos as with and without fireballs, this is essential because by choosing good candidates for videos with fireballs the learning is more specific. RANSAC “RANdom SAMple Consensus” is responsible for estimating the parameters of a mathematical model in Autobol.

Since 2019 we have deployed a network of stations with allsky cameras for the detection of bright meteors (fireballs). By October 2021, 6 stations were installed in the south of Uruguay, in what made up the first stage of the Red de Detección de Bóridos del Cono Sur (BOCOSUR). The stations run an application developed by our group (see Caldas et al. in this conference), which detects any change in brightness in consecutive frames. Therefore, a classification should be made between videos with and without fireballs. In 2022, a group of Electrical Engineering students (Ballestrino et al. 2022) developed an algorithm based on machine learning for the automatic classification of the videos, using the classification we had done as a training base. To train the Autobol package, we used the manual classification of ~ 8000 videos, where 363 of them have fireballs. In this poster we present the results of applying these predictive classification models to a database of over 250,000 videos. We present statistics on the performance of the network and the classification algorithm.

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