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### FLOWCAM USED AS A TOOL TO IDENTIFY AND CLASSIFY ZOOPLANKTON

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Advances in technology enabled the development of semi-automatic imaging systems. These systems have algorithms that identify and classify marine organisms in a short time as well as estimate abundance, biomass and measure the size of marine organisms. One of these widely used systems is the FlowCAM (Flow Cytometer and Microscopy), which combines the microscope and flow cytometer functions. The present study was based on quantitative samplings of a zooplankton community. Its aim was to identify and classify the zooplankton community using a FlowCAM semi-automatic imaging system. For the sampling were held weekly collections on December 2010 at a fixed station next to the Cabo Frio Island - Arraial do Cabo, RJ (22°59'86"S, 42°00'28" W). The zooplankton samples were collected by horizontal subsurface trawls with a 100 µm mesh and treated in 4% formaldehyde solution neutralized with sodium tetraborate. At the laboratory, a total of 45 zooplankton samples were sub-sampled and processed in a Benchtop B3 FlowCAM model and later used in semi-automatic particle classification using the VSP software. Semi-automatic classification filters were created to allow the identification and classification of 13 zooplankton groups of a total of 135,000 images. Was observed, as a result of the image analysis, that Copepoda was the dominant group, ranging from 219.7 to 10980.9 org.m<sup>-3</sup>; followed by Cladocera, Cirripedia, Radiolaria, Appendicularia, and Pteropods, which appeared in more than 70% of the samples. No occurrences of the Ostracoda and Siphonophora groups were found, despite the classification filter. The results suggest that FlowCAM may be used in the identification and classification of zooplankton groups. Nevertheless, is necessary to improve the algorithms to enable classification at the lowest possible taxonomic level.

Keywords: zooplankton, semi-automatic analysis, FlowCAM.