Quantitative Analysis of Microplastics in Coastal Sediment in Beaches of Spain and Brazil

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SUMMARY

Microplastics are small particles of plastic nature, with a size smaller than 5 mm in diameter. These have a devastating potential in the environment. There are several factors that can influence the distribution of microplastics in the marine environment, such as wind conditions, turbulence generated by boat traffic, anthropic activities with a high degree of contamination and morphodynamic classification of the shore line. The objective of this work is to carry out a comparative study of the amount of microplastics found on different beaches of the east coast of Spain, bathed by the Mediterranean Sea and the southern coast of Brazil, bathed by the Atlantic Ocean. The methodology in both environments was based on the ESMARES Program methods, with three different steps: laboratory procedures, identification of microplastics and comparative analysis. It was observed that in Spain, the beach of Autocine had the highest amount of microplastics accounted for and the beach of Puzol had the lowest. In Brazil, the beach that obtained the highest number of microplastics was Brava and the one that obtained the lowest was Atalaia beach. This paper concluded that the factors that control the distribution of microplastics can be differentiated both locally and globally. In the first case, a predominance of anthropic factors is observed, influenced by morphodynamic characteristics and the coastal drift. In the second, the distribution of microplastics seems to be controlled, more, by the characteristics of the environment in which they are located.