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2015 Grants-in-Aid of Research Final Report

Analysis of the vertebral morphology and the biomechanical properties of the skeleton in four dolphin species off southern South America employing geometric morphometrics

The help of the Grant awarded by the SMM, made it possible for me to travel to the National Museum of Natural History (Smithsonian Institution, Washington DC) and to the American Museum of Natural History (New York), during December 2015. Thanks to those visits, I was able to digitize vertebrae of four dolphin species: *Cephalorhynchus commersonii*, *Lagenorhynchus australis*, *L. obscurus* and *L. cruciger*. Based on the data collected (three dimensional landmarks) adding to the data available for me in South America, I will investigate the differences in vertebral shape of the species mentioned, making a comparative study of the functional anatomy in relation to the habitat of those closely related and understudied species. Currently, I am developing appropriate statistical analysis to study the changes of vertebral morphology along the skeleton at different levels: different ontogenetic stages, within a particular species and between the four of them. The visits to the museums were more than positive, not only because of the high value of the collected data, but also because I visited two of the most important collections of cetaceans in the world, People I met while working there enriched my development as a future researcher.