

## Conference Abstract

# Application of Fuzzy Measures to Move Towards Cyber-Taxonomy

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## Abstract

The species inventory of global biodiversity is constantly revised and refined by taxonomic research, through the addition of newly discovered species and the reclassification of known species. This almost three-century-old project provides essential knowledge for humankind. In particular, knowledge of biodiversity establishes a foundation for developing appropriate conservation strategies. An accurate global inventory of species relies on the study of millions of specimens housed all around the world in natural history collections. For the last two decades, biological taxonomy has generated an increasing amount of data every year, and notably through the digitization of collection specimens, has gradually been transformed into a big data science. In recognition of this trend, the French National Museum of Natural History has embarked on a major research and engineering challenge within its information system: the adoption of cyber-taxonomic practices that require easy access to data on specimens housed in natural history collections all over the world. To this end, an important step is to automatically complete and reconcile the heterogeneous classification data usually associated with specimens managed in different collection databases. We describe here a new fuzzy approach to reconciling the classifications in multiple databases, enabling more accurate taxonomic retrieval of specimen data across databases.

**Keywords**

similarity, classification data, cyber-specimen, artificial intelligence, integrative taxonomy, collection specimen

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**Conflicts of interest**

The authors have declared that no competing interests exist.