



## **Multiproxy study in lacustrine sediments from Lagoa Feia- GO: implications for climatic variations in Central Brazil during the Holocene**

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Climatic changes and their socio-environmental impacts are an issue of constant debate. Instrumental data collected over the last 150 years show a positive linear trend in global temperature, where the last decade was the warmest one. This observed increase in the mean global temperature impacts in the atmospheric and oceanic circulation, and it has been associated with an increase in greenhouse gases concentration in the atmosphere, intensified since the Industrial Age. However, it is known the terrestrial climate system presented an intrinsic variation before the Industrial Age registered in several depository environments. Study of these records is part of paleoclimatological research through paleoenvironmental proxies to infer about climates of the past (e.g. pollen assemblages, stable isotope analysis, and environmental magnetism). In recent years, several paleoclimatic studies have identified lacustrine environments as important records of climatic and environmental changes because they integrate atmospheric and environmental variations. Within this context, paleoclimatic studies in lakes in the South American region are modest when compared to other parts of the world. An example of this gap in paleoclimatic studies is Central Brazil area. Central Brazil's predominant biome is the Cerrado (Brazilian savanna) and this is an important region to the water resources dynamics. This environmental data gap impairs the validation of global numerical simulations and, consequently, the improvement of future climate projections representing a limiting factor in climate change analysis and a challenge for the Brazilian and the international scientific community. The Federal District (FD, included in Central Brazil area) presents many small lakes located in several river basins affected by different contexts of land use evolution. This study aims to contribute to the understanding of the South American climate during the Holocene in Central Brazil by investigation of lake records in the FD and surroundings. Here, we will present the preliminary results of the investigations for the Lagoa Feia, one of surrounding FD lake. These results comprises granulometry data, environmental magnetism data (e.g., magnetic susceptibility, MRN, ARM and S-ratio) and geochemical data (major and minor elements), obtained from a holocenic 6-m-length core collect in the Lagoa Feia. Climate variations recorded in this core will be discussed.