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Identification of sensitive regions to climate change and anticipation of climate events in Brazil

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In Brazil, the water system is essential for the electrical system and agribusiness. Understanding climate changes and predicting long-term hydrometeorological phenomena is vital for developing and maintaining these sectors in the country. This work aims to use data from the SIN system (National Interconnected System) in Brazil, from the main hydrological basins, as well as historical rainfall data, in complex networks and deep learning algorithms, to identify possible climate changes in Brazil and predict future hydrometeorological phenomena. Through the methodology developed in this work, the predictions generated showed satisfactory results, which allows identifying regions more sensitive to climate change and anticipating climate events. This work is expected to help the energy generation system in Brazil and the agronomy sector, the main sectors that drive the country's economy.