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# Rainfall variability modelling in Rwanda

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Support to climate change adaptation is a priority in many International Organisations meetings. But is the international approach for adaptation appropriate with field reality in developing countries?
In Rwanda, the main problems will be heavy rain and/or long dry season. Four rainfall seasons have been identified, corresponding to the four thermal Earth ones in the south hemisphere: the normal season (summer), the rainy season (autumn), the dry season (winter) and the normo-rainy season (spring). The spatial rainfall decreasing from West to East, especially in October (spring) and February (summer) suggests an «Atlantic monsoon influence» while the homogeneous spatial rainfall distribution suggests an «Inter-tropical front » mechanism.
The torrential rainfall that occurs every year in Rwanda disturbs the circulation for many days, damages the houses and, more seriously, causes heavy losses of people. All districts are affected by bad weather (heavy rain) but the costs of such events are the highest in mountains districts.
The objective of the current research is to proceed to an evaluation of the potential rainfall risk by applying advanced geospatial modelling tools in Rwanda: geostatistical predictions and simulations, machine learning algorithm (different types of neural networks) and GIS. The research will include rainfalls variability mapping and probabilistic analyses of extreme events.