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Simultaneous Global Climate Change "Heat Waves" and Microwave and Radio Wave from Solar Flair

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Abstract

Global climate change has led to a significant increase in the frequency and intensity of extreme heat waves, posing serious challenges to environmental stability, public health, and economic systems worldwide. At the same time, solar flares release intense bursts of electromagnetic radiation, including microwave and radio waves, which can influence the Earth's upper atmosphere and affect communication systems, satellites, and other technological infrastructure. Understanding the possible interaction between solar flare emissions and global temperature anomalies requires advanced analytical approaches capable of integrating diverse environmental and space-weather datasets.

This study investigates the potential relationship between simultaneous occurrences of global heat waves and electromagnetic emissions generated by solar flares using machine learning and data science techniques. Large-scale datasets from satellite observations, solar monitoring systems, and global climate records are integrated to analyze temporal patterns and correlations between solar activity and extreme heat events. Data preprocessing, feature extraction, and statistical modeling are applied to identify significant patterns in solar microwave and radio wave emissions that may coincide with atmospheric temperature anomalies.

Machine learning algorithms, including time-series analysis and predictive modeling, are employed to examine whether solar flare activity can contribute to short-term climate variability or serve as an indicator for extreme heat events. By combining climate data with space-weather signals, this research demonstrates how artificial intelligence can enhance predictive capabilities for environmental monitoring. The findings contribute to interdisciplinary research linking climate science, space weather analysis, and AI-driven data analytics, potentially supporting improved forecasting models and early-warning systems for extreme climatic conditions.

Keywords: Climate Change, Heat Waves, Solar Flares, Microwave Radiation, Radio Waves, Machine Learning, Artificial Intelligence, Climate Data Analytics, Space Weather, Predictive Modeling