Paper ID: 89690
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IAF SYMPOSIUM ON ONGOING AND NEAR FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS (A7)
Science Goals and Drivers for Future Exoplanet, Space Astronomy and Space Physics (2)

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EXOPLANETARY ATMOSPHERES AS PROXIES FOR MODELLING TERRESTRIAL CLIMATE CHANGE

Abstract

Novel approaches that help the human genus to understand terrestrial climate change can be inferred beyond traditional data sources. Consequently, exploring exoplanetary atmospheres emerges as an alternative pathway for modelling planetary climate systems. This proposal advocates for a thorough exploration of exoplanetary atmospheres as a framework for modelling terrestrial climate change and offers an inferential analysis of Earth's climate. The research seeks to enhance our understanding of terrestrial climate dynamics and climate change mitigation strategies by integrating spectroscopic analysis and climate modelling techniques. Computational models based on observed exoplanetary atmospheres will be used to simulate climate dynamics by incorporating variables such as atmospheric composition, stellar radiation, and orbital parameters adapted for Earth's conditions. Comparative studies will be utilized to assess the similarities and differences in climate behavior between modelled exoplanetary atmospheres and historical Earth climate data. An evaluation of model efficacy in predicting terrestrial climate change is also discussed. Expanding viewpoints beyond the confines of the Earth provides fresh perspectives on climate dynamics and potential catalysts for climate change.