

# Heliophysics Applications on Education and Research using Cloud Computing

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## Abstract

Cloud computing has gained substantial momentum across diverse applications in recent years, notably in scientific computing, collaborative research, and large-scale machine learning operations. Its integration of data and code within a unified system facilitates swift data transfer and sharing among various research groups. However, despite its prominence in research, cloud computing usage in education is still limited beyond computer science courses.

Embracing this technological shift presents an opportunity for graduate students and early-career researchers to familiarize themselves with these tools, contributing to open research and facilitating global collaboration.

In this work, we explore from a user perspective the use of cloud computing in two NASA projects, particularly the Center for Geospace Storms (CGS) and Heliocloud, shedding light on how these initiatives can benefit the scientific community. By bridging higher education with academic and research environments through workshops and tutorials, these efforts can play a pivotal role in educating the next generation of researchers.