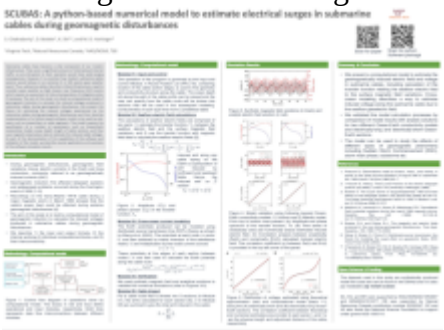
Shibaji
Chakraborty
Virginia Tech
X. Shi (Virginia Tech), M. D. Hartinger (Space Science Institute), D. Boteler (Natural Resources Canada)
Poster
Submarine cables are crucial for global internet connectivity, but their vulnerability to extreme space weather events remains uncertain. Understanding and mitigating this risk is essential for maintaining reliable communication infrastructure. This study aims to develop a computational model to assess the induced voltages in submarine cables during geomagnetic disturbances. The model, implemented in Python, utilizes parameters such as ocean and Earth conductivity, cable length, and magnetic observatory data to estimate induced voltages. By providing a user-friendly software tool, researchers and engineers can evaluate the impact of geomagnetic events on submarine cables. Through theoretical explanations and practical demonstrations, this study enhances our understanding of submarine cable behavior under extreme space weather conditions. Ultimately, this research contributes to the preparation and mitigation of potential disruptions to submarine cable systems, ensuring the resilience of global communication.

Poster PDF
Chakraborty-Shibaji-Scubus.pdf
Poster session day
Thursday, April 18, 2024
Poster location
11
Meeting homepage
Space Weather Workshop 2024
Download to PDF