Mees McCoy Franssen

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Research Interests

Atmospheric and Climate Dynamics, Tropical Cyclones, Cloud Physics, and Atmospheric Radiation

Education

McGill University — BSc. in Atmospheric and Oceanic Sciences 2019-2023

- cGPA: 3.81/4.00, Major GPA: 3.87/4.00
- Minor: Environmental Science
- Graduate Course Experience: Atmospheric and Oceanic Dynamics, Waves and Stability, Dynamics of Current Climates, Cloud Physics, Atmospheric Radiation, Research Methods

Honors and Awards

Mount Washington Observatory Internship Award, $6500 2024
Tomlinson Engagement Award for Mentoring, $300 2023
Rubin Gruber Science Undergraduate Research Award, $7000 2022

Publications

Schmedding R., **Franssen M.**, Zuend A. (2024, submitted to ACS ES&T): A Machine Learning Approach for Predicting the Pure-Component Surface Tension of Atmospherically Relevant Organic Compounds.

Research Experience

Global Climate Modeling And High Performance Computing 2024
Ported CESM2.1.5 onto ComputeCanada's Narval Cluster. Implemented source code changes to ice-microphysics schemes, and conducted comparison tests between generations of ice-microphysics schemes nudged to MERRA2 reanalysis data.

Climatological Analsysis and Field Campaigns 2022
Applied a combination of reanalysis and observational data to produce a climatological analysis of the Italian Monte Baldo region, supplemental to the TEAMx field campaign (https://doi.org/10.1175/bams-d-21-0232.1).

Machine Learning and Atmospheric Chemistry Modeling 2021
Developed machine learning approaches (XGBoost, Random Forest, and KNN) to predict the pure-component surface tension of common organic aerosol compounds. Results to be published in ACS ES&T.

Extra Curricular Activities

Department Council, Vice-President and EDI Officer 2021-2023
Organized monthly meetings, coordinated with event planning to ensure accessibility considerations, and represented the student body in faculty wide meetings concerning student health and accessibility.

aCADemy, Co-Founder and Vice-President 2020-2022
Co-founded a web-based tutorial service teaching Computer Aided Design (CAD). Developed the curriculum and developed tutorial designs. See website for details: https://mcgillacademy.wixsite.com/website

McGill Space Group, Control Systems Engineer 2020-2021
Designed and manufactured the reaction wheel housing for the McGill Space Group CubeSat. Participated in the inter-collegiate Canadian Satellite Design Challenge (CSDC).

McGill Baja Racing Subteam Leader 2019-2021
Lead engineer for the design and manufacture of the toe-box and throttle system for the McGill Baja car. Participated in the inter-collegiate SAE Baja Racing series, best finish was 19/200.