

## **From Physics to Aviation Forecasting**

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The operational duties of the Canadian Meteorological Aviation Centre are motivated by examining the structure and dynamics of the atmosphere. Treating the atmosphere as a fluid constrained to flow over the surface of the Earth, its state at a given time can be fully determined using a set of equations governed by Newtonian mechanics and thermodynamics. Given a set of initial conditions, these governing equations can be solved for the state of the atmosphere at a time in the future. Due to the complexity of the system, this process is done through Numerical Weather Prediction. This forecast state is then used to assess potential aviation hazards, including winds, visibility, clouds, turbulence and icing. These hazards are communicated to the clients using standardized products. This talk will serve as brief introduction to the field of meteorology, an overview of the duties of an operational aviation forecaster and a guide to undergraduate students for pursuing a career in the broader field of atmospheric science. It will close with a review of my experience graduating from St. FX with a physics major and transitioning into an applied science career with the government.