Cleveland State University
EngagedScholarship@CSU

Undergraduate Research Posters 2018 | Undergraduate Research Posters

2018

Characterizing the Turbulent Structure of the CBL and the Entrainment

Wei Jia
Cleveland State University

Follow this and additional works at: https://engagedscholarship.csuohio.edu/u_poster_2018

 Part of the Mathematics Commons, and the Physics Commons

How does access to this work benefit you? Let us know!

Recommended Citation

Jia, Wei, "Characterizing the Turbulent Structure of the CBL and the Entrainment" (2018). *Undergraduate Research Posters 2018*. 39.
https://engagedscholarship.csuohio.edu/u_poster_2018/39

This Book is brought to you for free and open access by the Undergraduate Research Posters at EngagedScholarship@CSU. It has been accepted for inclusion in Undergraduate Research Posters 2018 by an authorized administrator of EngagedScholarship@CSU. For more information, please contact library.es@csuohio.edu.

Characterizing the Turbulent Structure of the CBL and the Entrainment Zone

College of Sciences and Health Professions

Student Researcher: Wei Jia

Faculty Advisors: Shawn Ryan and Thijs Heus

Abstract

The convective boundary layer (CBL) is the lowest part of the atmosphere. The turbulent motions in the CBL are important for redistributing trace gases, particles, heat, and momentum between the surface and the free troposphere thus it is important that this process is properly represented in numerical models that attempts to simulate the atmosphere. This study is trying to characterize the water vapor structure in the quasi-stationary CBL, using statistical way to build the turbulent model and uses a high resolution model: Large Eddy Simulation (LES) to investigate the adequacy of the model. We found that the water vapor flux at the entrainment zone could be predicted by the variance of water vapor. We are using the data from LES to development this relationship further.