ZEQIAN (HAZEL) XIA

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EDUCATION

University of Utah, Salt Lake City — August 2016 - May 2019
M.S. Atmospheric Sciences

Florida State University, Tallahassee — August 2014 - April 2016
B.S. Meteorology — Cum Laude

Nanjing University of Information Science and Technology — September 2012 - June 2014
B.S. Meteorology (Degree Received in 2016) — (Transferred to FSU)

RESEARCH INTERESTS

Remote Sensing
Aerosol-Cloud-Climate Interactions
Cloud Microphysics
Aerosol Instrumentation

PROJECTS

Climatology of Aerosol Optical Properties and Particle Size Distribution
Visiting Research Scholar — *September 2019 - present*
Location: University of Utah — *Advisor: Prof. Anna Gannet Hallar*

- Study the climatology of aerosol optical properties and size distribution at Southern Great Plains (SGP). By combing the particle size distribution and optical properties, we are able to bring new insight into the aerosol sources at SGP via studying seasonal patterns.
- Explore aerosol optical properties and their relationship with wildfire activities using Particle Soot Absorption Photometer (PSAP) and Continuous Light Absorption Photometer (CLAP) measurements from both HART (Hallar's Aerosol Research Team) Laboratory at the University of Utah and Storm Peak Laboratory in Colorado.

Precipitating and Ice Multiplication Processes in Shallow Convective Clouds over the Southern Ocean
Graduate Research Assistant — *August 2016 - April 2019*
Location:University of Utah — *Advisor: Prof. Jay (Gerald) Mace*

Objective:

- Investigate the properties of shallow precipitating cloud profiles over the circumpolar Southern Ocean ($-40°$ to $-65°$) using combined CloudSat and CALIPSO measurements.

Methodologies:

- *Data Process*: Extract the remote sensing measurements (radar reflectivity profiles from CloudSat, totally Lidar backscatter coefficients from CALIPSO, and the associated thermodynamic profiles from ECMWF) when CALIPSO pointed at nadir (Dec 2006-Nov 2007).
- *Classification algorithm*: Develop an algorithm to classify the liquid water, horizontally oriented ice and randomly oriented ice, based on their differences in layer integrated backscatter coefficients and layer integrated depolarizations as indicated through the Monte Carlo simulation experiment.
- *Statistical analysis*: Analyze the classification results by calculating the seasonal probability distribution functions of the liquid, HOI, and ROI precipitating layers. Investigate the vertical distribution of precipitation condensate using the CloudSat radar reflectivity profiles.

Results:

- Rare observations of specular returns near the cloud top have unique signatures indicative of secondary ice production processes (SIP).
- SIP created pristine ice crystals that have been lofted to the cloud top and observed as HOI by CALIPSO.
- The increasing of INPs would explain the capacity for supercooled clouds to create snow in the presence of low ice-nucleating particle concentrations.

Statistical Analysis of Stationarity of Southern Oscillation Index and Nino 3.4 Sea Surface Temperature

Undergraduate Research Assistant *May 2015 - April 2016*
Location: Florida State University *Advisor: Prof. Jon E. Ahlquist*

- Executed qualitative and quantitative analysis on a wide range of data, including sea surface temperature and annual precipitation data.
- Learned different statistical analysis methods and programming skills.
- Gathered, reviewed, and summarized literature from scientific journals.
- Prepared and edited reports, presentations, and articles.

HIGHLIGHTS OF QUALIFICATION

Software	*Advanced*	: Fortran, IDL, Matlab, GrADs
	Intermediate	: R, Python, NCL, C Program
Tools	MS Office, Latex	
Skills	Literature Searches, Writing Scientific Papers,	
	Analyzing and Synthesizing Data,	
	Proficient with Meteorological Processes and Phenomena,	
	Practical Knowledge of PSAP, CLAP, CloudSat, and CALIPSO	

ACHIEVEMENTS AND HONORS

Publication	Ice Multiplication Processes in Shallow Clouds over the Southern Ocean: Caught in the Act by CALIPSO and CloudSat (In process)
Scholarships	Academic scholarships in 2012, 2013 academic years, NUIST, Nanjing
	Out-of-state waivers in 2015 and 2016 academic years, FSU, Tallahassee
Membership	Phi Beta Kappa (academic honor society)

PERSONAL TRAITS

Reliable Research Assistant with experience in researching atmospheric sciences project.
Highly motivated and eager to learn new things.
Skilled in managing large volumes of data using different software.
Dedicated to skill development and bringing value to teams.
Ability to work as an individual as well as in a group.

LANGUAGE

English and Mandarin Chinese

HOBBIES

Piano, Swimming, Hiking, and Cooking