

Lightning Modeling Grand Challenge Workshop

1-3 April 2025, Texas Tech University, International Cultural Center, Lubbock, Texas

Zoom: Lightning Modeling Workshop – Plenary.

Same link every day. [Meeting ID: 954 9568 7233](#), [Passcode: 368674](#)

Or get a link from <http://lightning.ttu.edu/workshop/zoom.html>

1 Apr 2025	Roadmap Review and Orientation Hall of Nations (All Day)	<i>All times US CDT (UTC -5)</i>	
10:30	Hotel shuttles start / check-in opens		
11:30	Working lunch / workshop begins	Hall of Nations	
12:00	Welcome remarks	Joseph Heppert Amelia Talley	TTU VP Rsrch/Innov TTU CAS
12:15	“Get to know each other” activity		
12:30	Workshop and roadmap overview	Eric Bruning	TTU
12:45	Review of contributions to date	Eric Bruning Thom Edwards	TTU Sandia
13:05	Discussion		
13:20	Short break		
13:30	Invited Talks (* = online)		
13:30	Towards coarse-grained models for extensive streamer coronas in thunderclouds	Alejandro Luque*	IAA, Spain
13:40	Meter-scale streamer system and time-domain fractal lightning models	Brant Carlson	LANL
13:50	Quantifying Electrical Discharges and their chemical implications using Ultraviolet Radiation	Patrick McFarland	Penn State
14:00	Interfacing Cloud and Plume Models with Fractal Model of Electrical Discharges	Jeremy RiOUSset	Embry-Riddle
14:10	Introducing Time and Current in the Fractal Model of Electrical Discharges	Annelisa Esparza	Embry-Riddle/KSC
14:20	Self-consistent modeling of currents in leader and return stroke channels	Caitano da Silva	New Mexico Tech
14:30	Lightning Leader Channel Modeling	Daniel Jensen	LANL
14:40	Discussion		
15:10	Coffee break		
15:30	Invited Talks (* = online)		
15:30	Taking a User-Centered Approach to Model Output Development	Jamie Vickery*	NOAA GSL
15:40	The role of high-energy processes in lightning initiation	Joseph Dwyer*	New Hampshire
15:50	BIMAP-3D observations show lightning flashes were ignited by cosmic-ray showers	Xuan-Min Shao / D. Jensen	LANL
16:00	Electric Fields in Thunderstorms	Michael Stock	OU/CIWRO
16:10	Updates on developing a Satellite-based Lightning OSSE	Patrick Gatlin	NASA MSFC
16:20	Lightning optical emission: Monte Carlo modeling of signal propagation in complex microphysics	Kelcy Brunner	TTU
16:30	Sandia Model/Measurement Status and Outlook	Grant Soehnel	Sandia
16:40	Discussion, breakout attendance survey		
17:00	Adjourn		

2 Apr 2025	Breakouts	All times US CDT (UTC -5)	
8:00	Hotel shuttles start		
8:30	Welcome coffee and pastries	Room	
9:00	Introduce breakouts and goals	HON (Plenary)	
9:20	Short break		
9:30	Breakouts 1-5a: Feedback on needs stated in roadmap		
	Weather and cloud electrification modeling	HON (Plenary)	
	Initiation/Streamer models, source signal production	105a	
	Leader/Discharge models, source signal production	105b	
	Signal propagation, sensor modeling, validation	102	
	Online guided discussion - topics from participants	Online (Meet)	
10:45	Coffee break		
11:00	Plenary discussion - 10 min overviews of each breakout's main themes, x5, 10 min discussion	HON	
12:00	Working lunch		
13:30	Breakout 1-5b: Planning for implementation	Room	
	Weather and cloud electrification modeling	HON (Plenary)	
	Initiation/Streamer models, source signal production	105a	
	Leader/Discharge models, source signal production	105b	
	Signal propagation, sensor modeling, validation	102	
	Online guided discussion - topics from participants	Online (Meet)	
15:00	Coffee break		
15:30	Plenary discussion - 10 min overviews of each breakout's main themes x5, 30 min discussion	HON	
17:00	Adjourn		
	Dinner on own		
3 Apr 2025	Summary Plenary and Next Steps Hall of Nations (All Day)		
8:00	Hotel shuttles start		
8:30	Welcome warm breakfast		
9:15	Introduce today's goals, including summary of yesterday		
9:30	Discussion of priorities from yesterday, identify roadmap revisions.	Open discussion	
10:30	Coffee break		
11:00	Plenary discussion: goals for next year		
11:45	Wrap up discussion		
12:00	Adjourn		
	Lunch on own		
13:30-	Tour of Reese Center field site	33.5900, -102.0312	
15:30	HON remains available for implementation code sprint, plenary breakout open for online participants.		

The **online breakout** is via **Google Meet**:

<https://meet.google.com/vzx-epky-eik>

Other breakouts will not have online meetings.

Discussion after breakouts will be in the Plenary Zoom.

Further details on the workshop website: <http://lightning.ttu.edu/workshop>

- The Roadmap, v. 1.0.0
- Shuttle Schedule, Logistics and Locations, Points of Contact, and Code of Conduct