Authoritative References for Central Florida Operational Patterns

Purpose

This handout documents the meteorological sources supporting the seven claims used in the presentation. All references are FAA, NOAA, NASA, AMS, or university meteorology, no anecdotes, no case studies.

1. Atlantic Sea Breeze Moves Inland First

Sources:

- NOAA/NWS Melbourne (MLB) Area Forecast Discussions — daily documentation of earlier Atlantic breeze onset.
- FAA AC 00-6B *Aviation Weather*, Chapter 12 — sea breeze formation mechanics.
- AMS Journal of Applied Meteorology — Florida sea breeze climatology (Case & Manobianco).
- University of Florida IFAS meteorology publications — coastal boundary layer behavior.

2. Gulf Breeze Forms Later and Moves Eastward

Sources:

- NOAA/NWS Tampa Bay (TBW) AFDs — later onset of Gulf breeze due to warmer SST and deeper boundary layer.
- NASA/UF Sea Breeze Climatology — Gulf breeze timing and inland progression.
- FAA AC 00-6B — differential heating and delayed convergence.

3. Collision Zone as Primary Convective Incubator

Sources:

- NASA Kennedy Space Center Mesoscale Studies — boundary collision as dominant convective trigger.
- AMS Journal of Applied Meteorology — inland convergence and storm initiation.
- NWS MLB training modules — collision zone thunderstorm formation.

4. ORL / SFB / DAB Positioned Inside the Collision Zone

Sources:

- Geographic placement relative to Atlantic and Gulf breezes.
- NWS MLB and TBW aviation forecasts — routine mention of inland boundary interactions.
- FAA AC 00-6B — inland convergence zones and convective enhancement.

5. Coastal Return Routes Intersect Developing Boundaries

Sources:

- NWS MLB aviation forecasts — inland return routes crossing active boundaries.
- FAA Weather Handbook — sea breeze return flow examples.
- NASA mesoscale studies — inland progression of Atlantic boundary during afternoon hours.

6. Green Swamp / Lake Apopka / I-4 Corridor as Convergence Zones

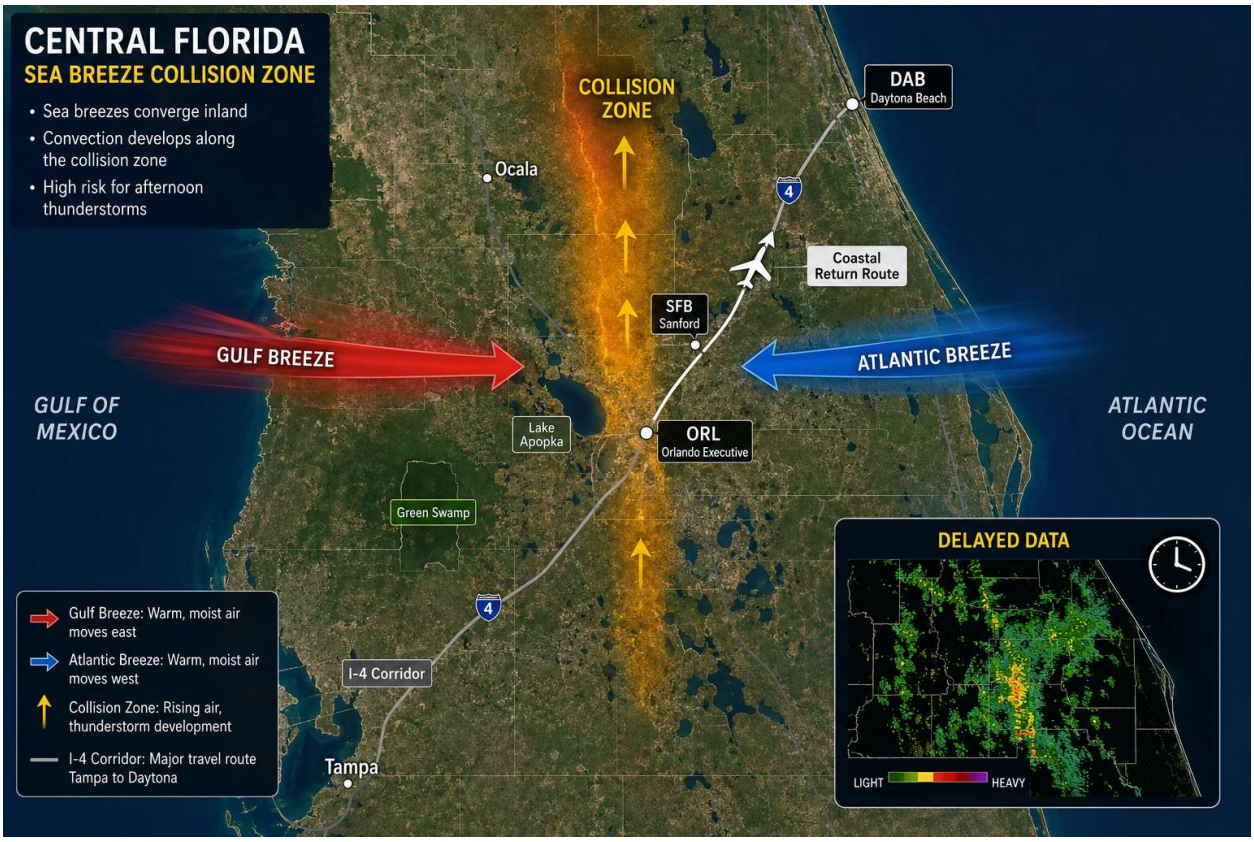
Sources:

- Florida DEP mesoscale studies — inland convergence over wetlands and lake boundaries.
- UF IFAS meteorology publications — localized circulations and early vertical development.
- AMS papers — inland boundary interactions and convective initiation.

7. Latency Errors Amplified by Rapid Growth

Sources:

- FAA AC 00-45H *Aviation Weather Services* — radar latency, mosaic delay, and scan timing.
- NOAA Radar Operations Center documentation — update cycles and processing delay.
- NTSB Florida convective accident analyses — rapid growth exceeding radar update rate.


CENTRAL FLORIDA
SEA BREEZE COLLISION ZONE
• Sea breezes converge inland
• Convection develops along the collision zone
• High risk for afternoon thunderstorms
COLLISION ZONE
DAB
Daytona Beach
Ocala
4
Coastal Return Route
SFB
Sanford
GULF BREEZE
ATLANTIC BREEZE
GULF OF MEXICO
ATLANTIC OCEAN
Lake Apopka
ORL
Orlando Executive
Green Swamp
DELAYED DATA
LIGHT
HEAVY
Gulf Breeze: Warm, moist air moves east
Atlantic Breeze: Warm, moist air moves west
Collision Zone: Rising air, thunderstorm development
I-4 Corridor: Major travel route Tampa to Daytona
I-4 Corridor
Tampa