Spatial variability in tropical cyclone climatology along the southeastern Atlantic coastline of the United States

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Methods

Use NHC HURDAT2 Database

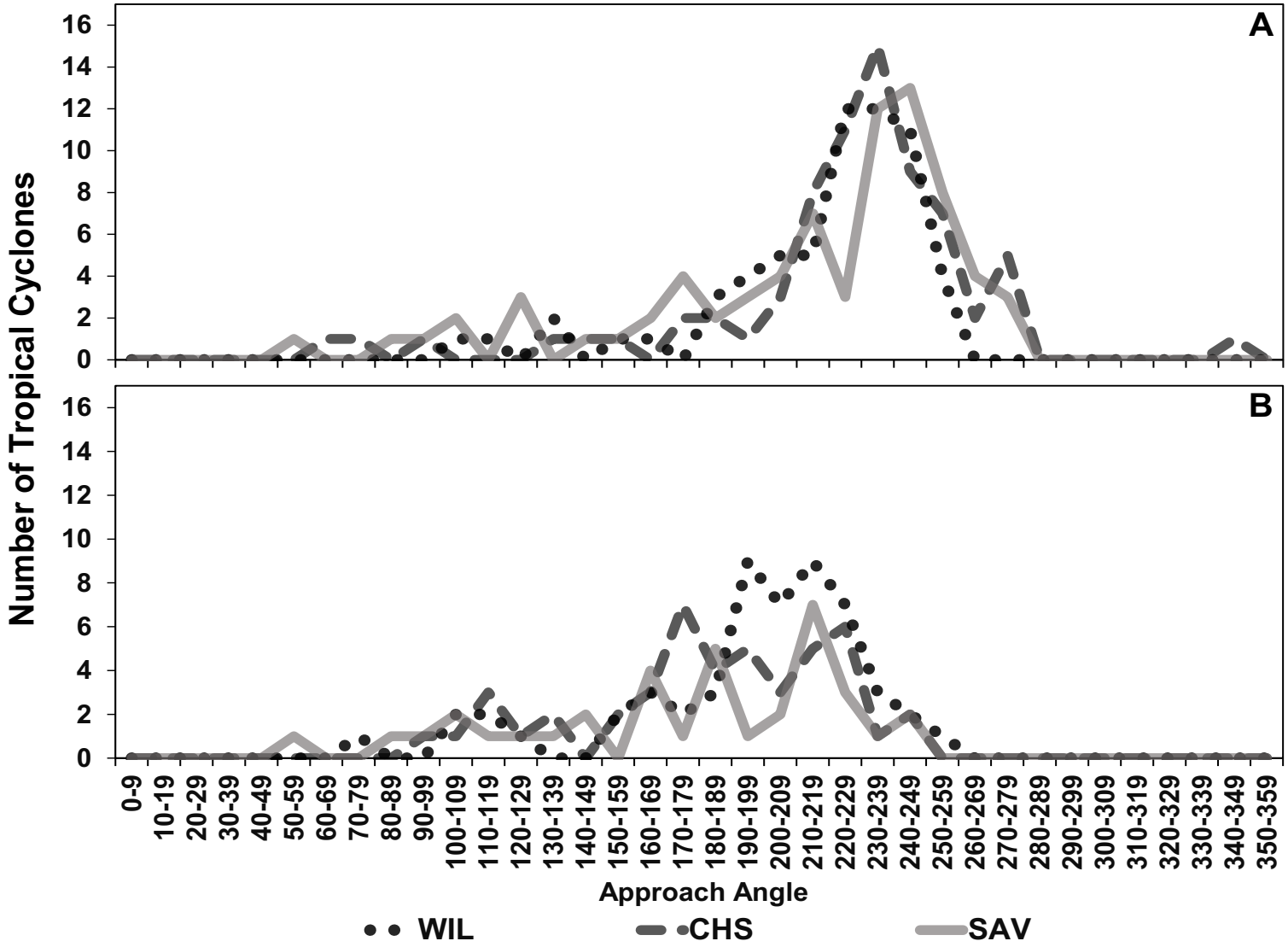
List characteristics of every tropical cyclone to strike Within 75 n mi of Wilmington, Charleston, or Savannah

Track

	WIL	CHS	SAV
Gulf – Tropical Storms	42%	47%	51%
Florida – Tropical Storms	16%	21%	22%
Atlantic – Tropical Storms	40%	33%	25%
Hybrid – Tropical Storms	2%	0%	1%
Gulf – Hurricanes	9%	11%	19%
Florida – Hurricanes	9%	13%	17%
Atlantic – Hurricanes	78%	72%	58%
Hybrid – Hurricanes	4%	4%	6%

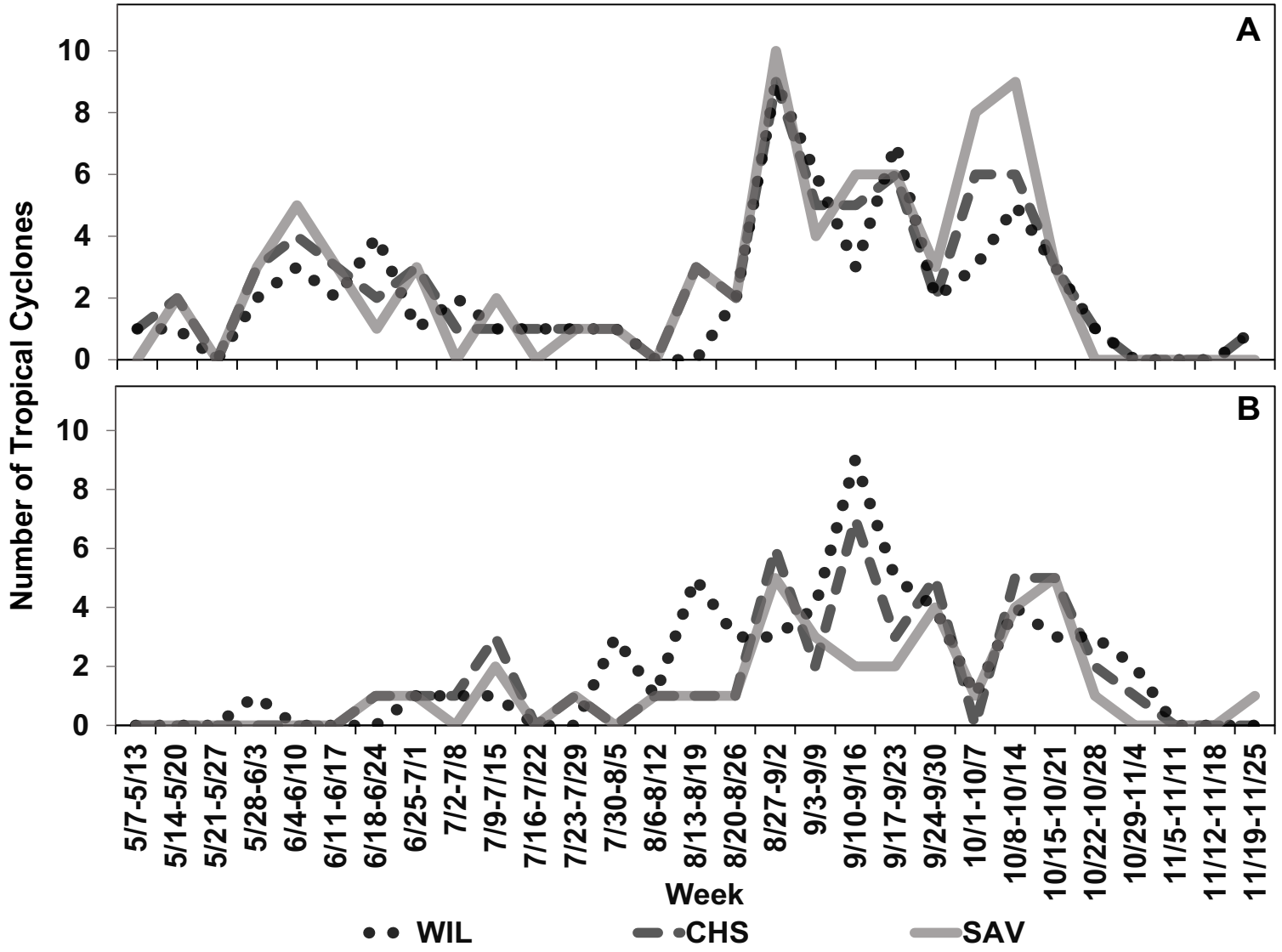
Approach Angle

A=Tropical Storms B=Hurricanes

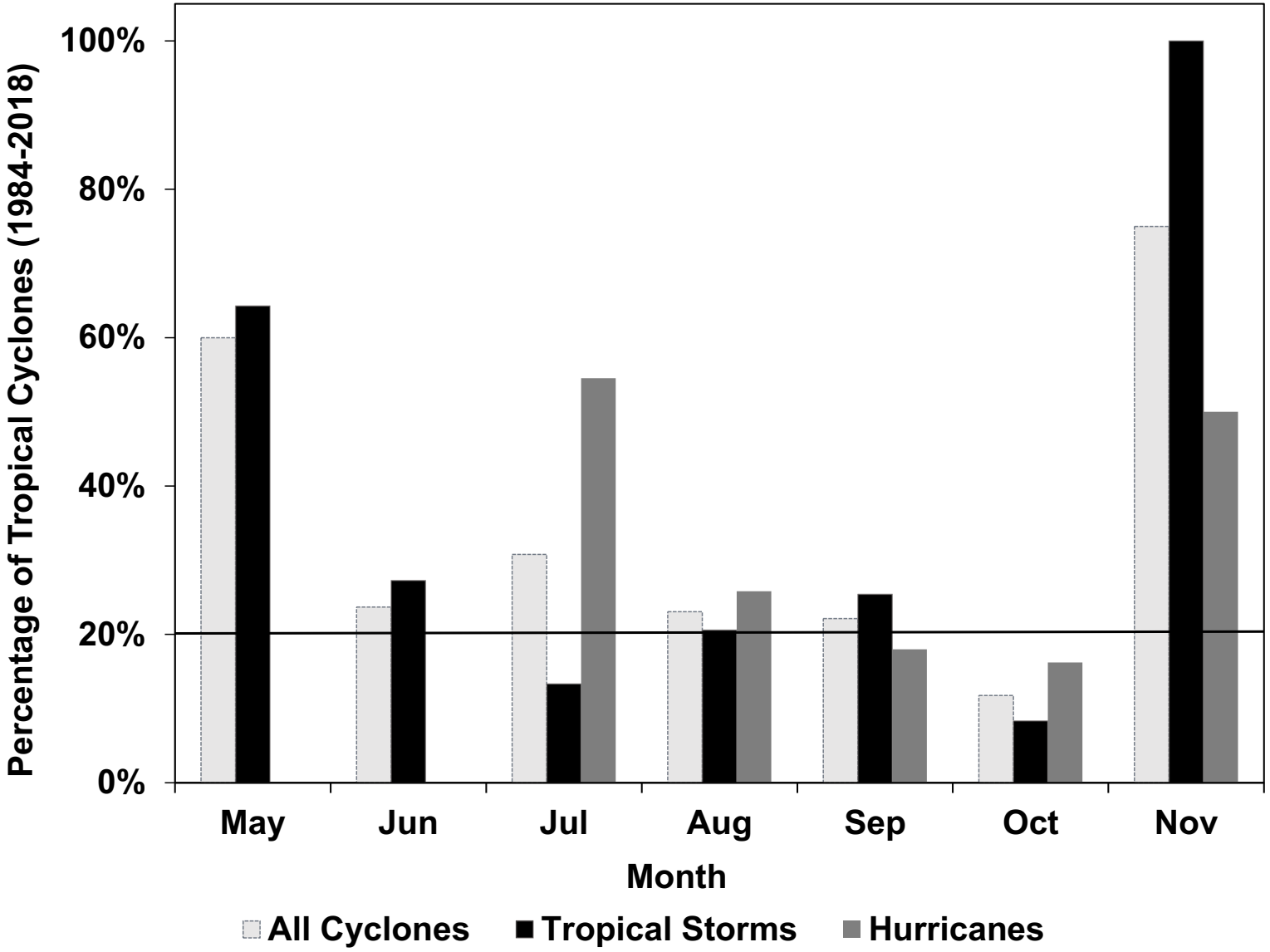


Seasonality

A=Tropical Storms B=Hurricanes

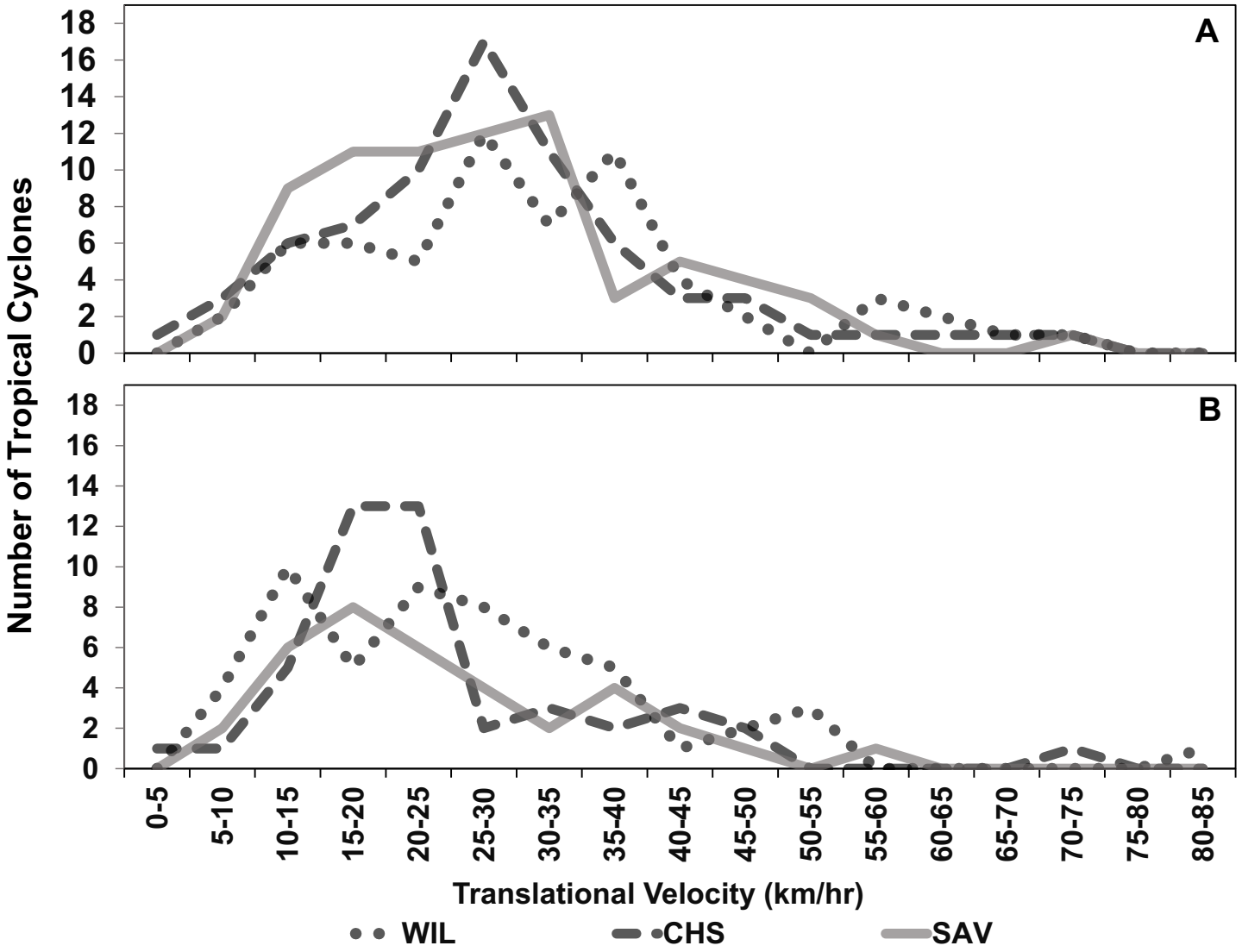


Seasonal Broadening?



Translational Velocity

A=Tropical Storms B=Hurricanes



Conclusions

- Fewer strikes on Savannah
- Secondary seasonal maximum in tropical cyclones
  - Seasonal broadening in recent decades?
- Dichotomy in translational velocity, approach angle
  - Translational velocity and approach angle affect true wind speed, rain amounts, and storm surge
- Gulf of Mexico influence on return rate, seasonality, intensity, approach angle, translational velocity
  - Traditionally the public looks to the sea
  - Effect strongest for Savannah