

# Local and remote variability of the Atlantic cold tongue

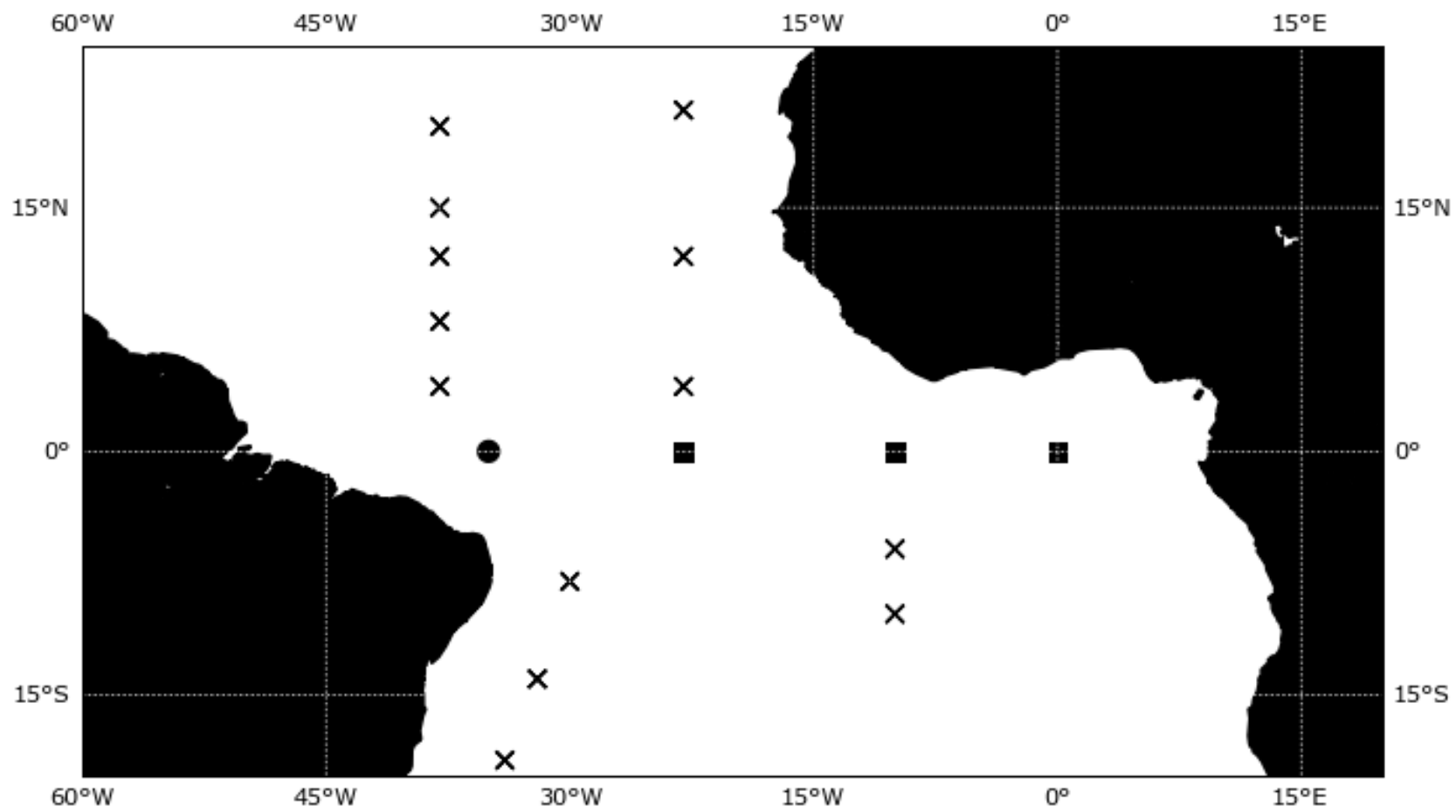
Roberto De Almeida

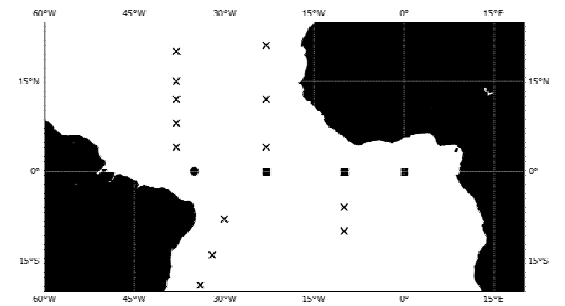
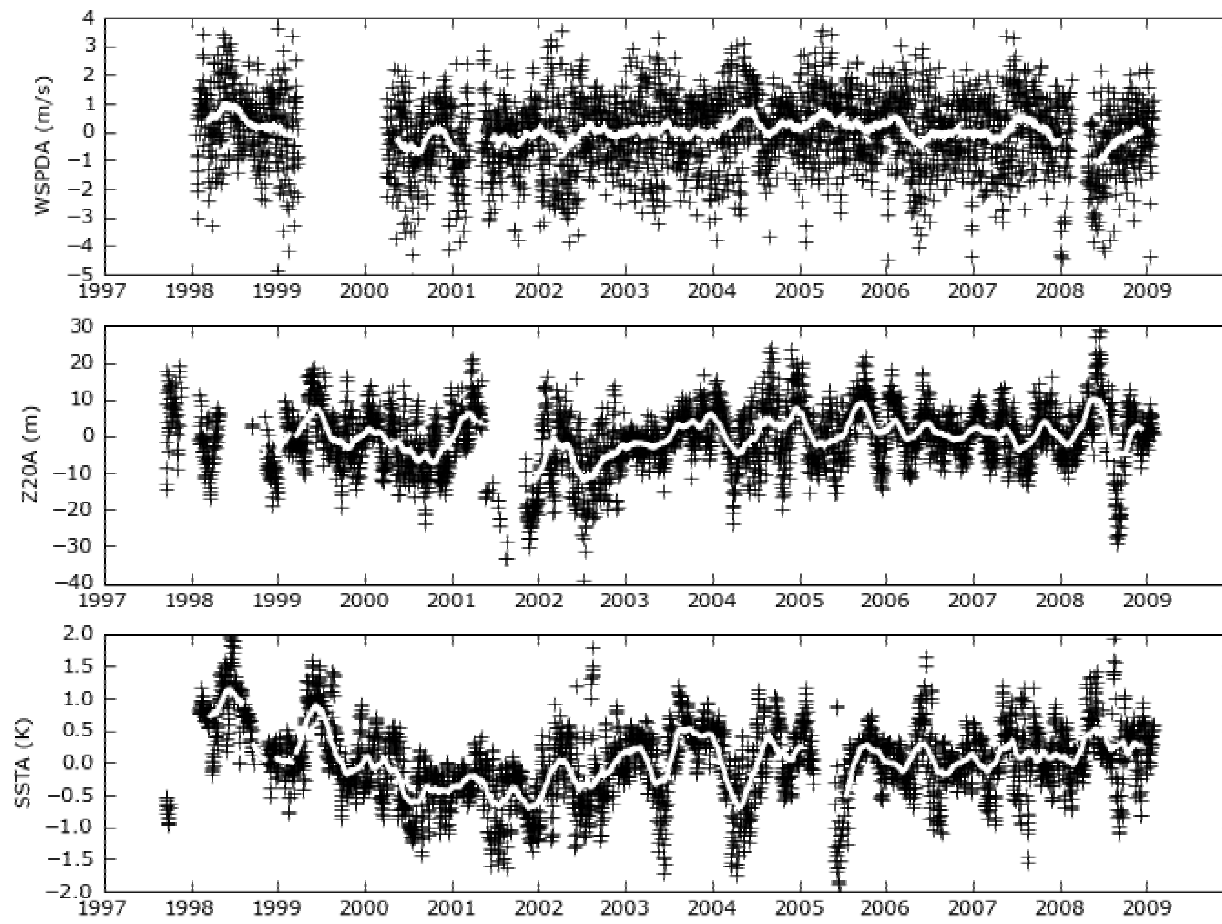
Paulo Nobre

Center for Earth System Sciences  
National Institute for Space Research

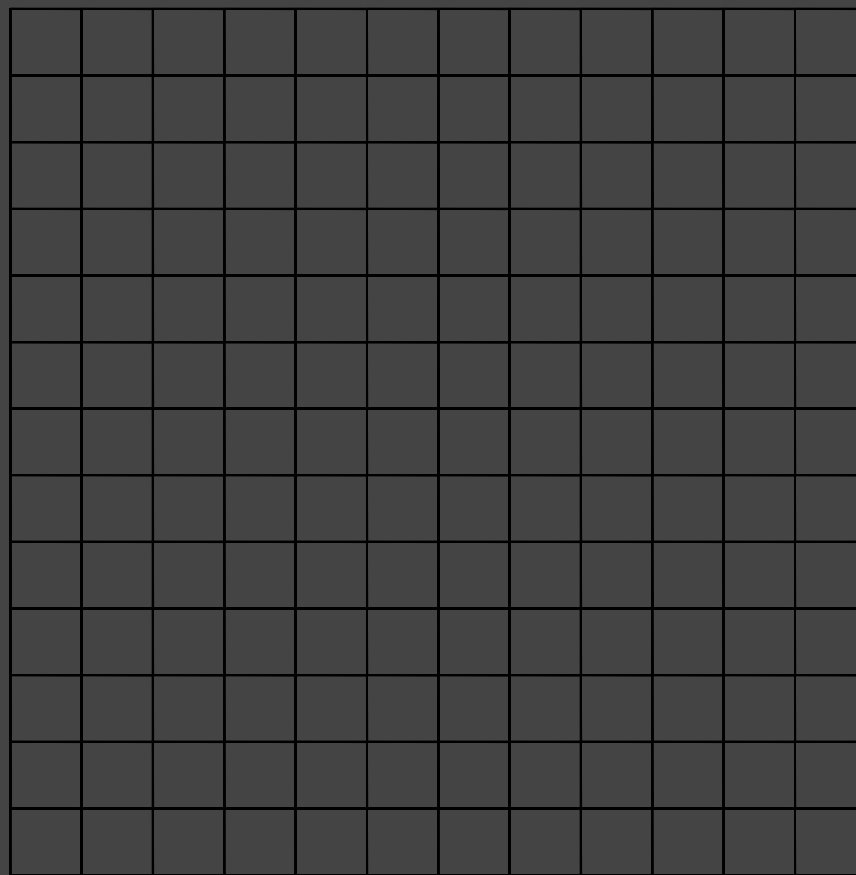
# Ocean--atmosphere coupled modes in the Tropical Atlantic

- Gradient mode
- Atlantic ENSO mode
  - can we see it using PIRATA data?
  - what can we learn?





time



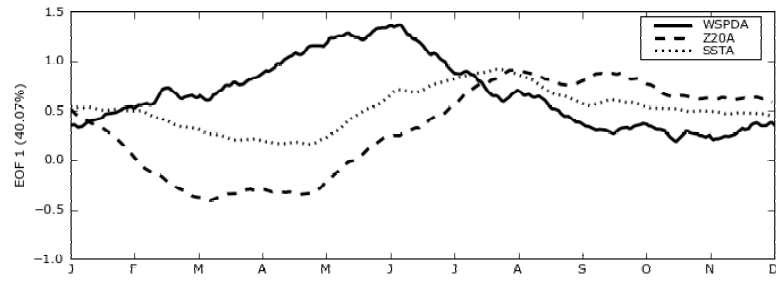
space

EOF: traditional way

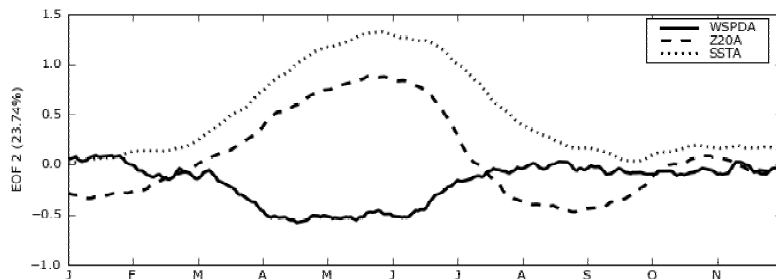
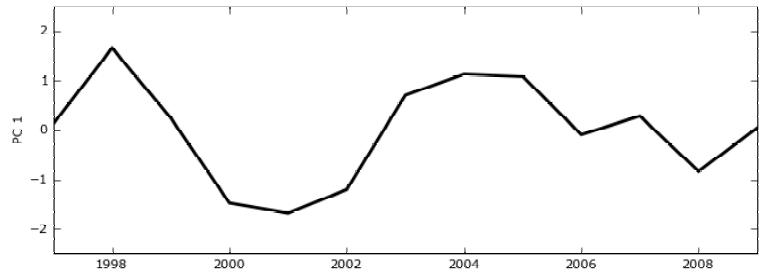
2009												
2008												
:												
time												
:												
1998	J	F	M	A	M	J	J	A	S	O	N	D
1997	J	F	M	A	M	J	J	A	S	O	N	D

"space"

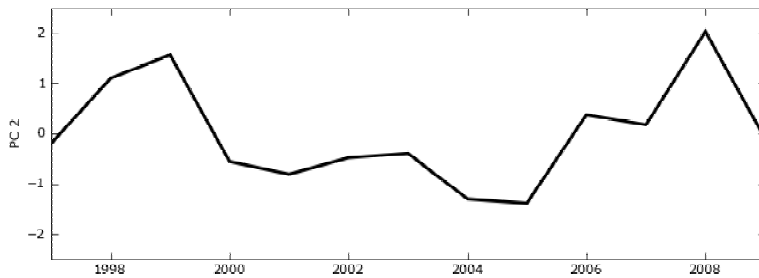
EOF: a different approach



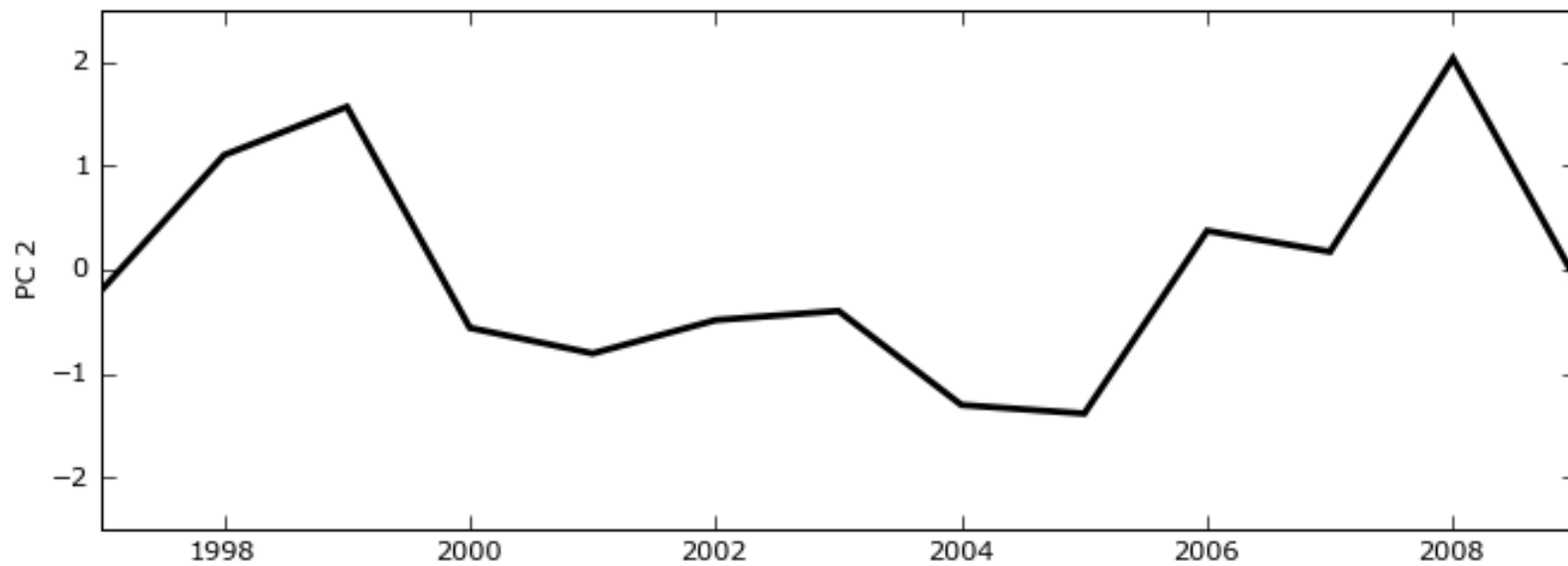
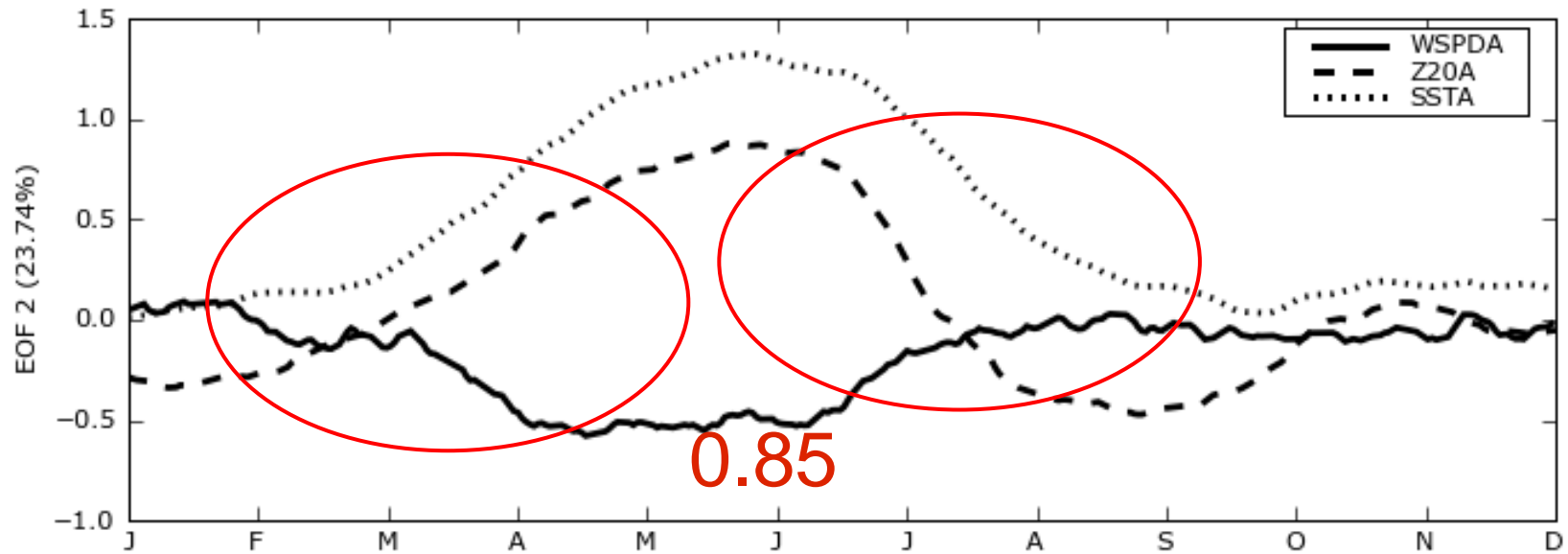
EOF 1: 40%



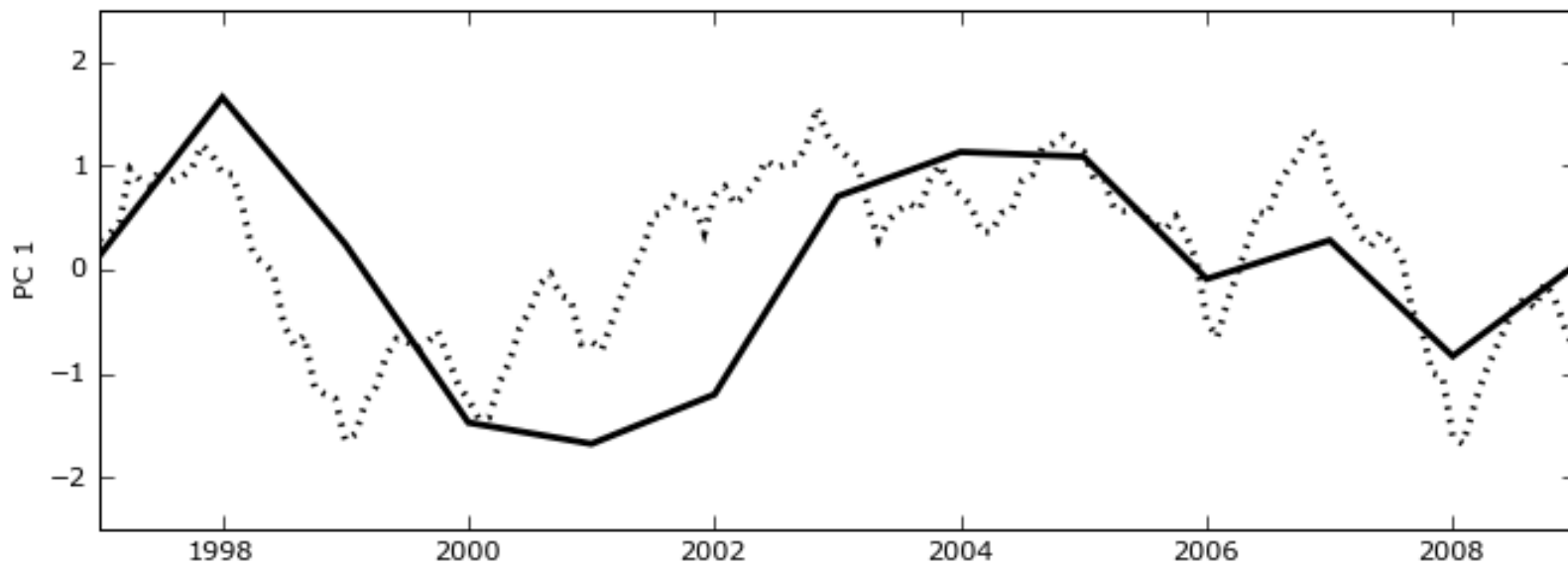
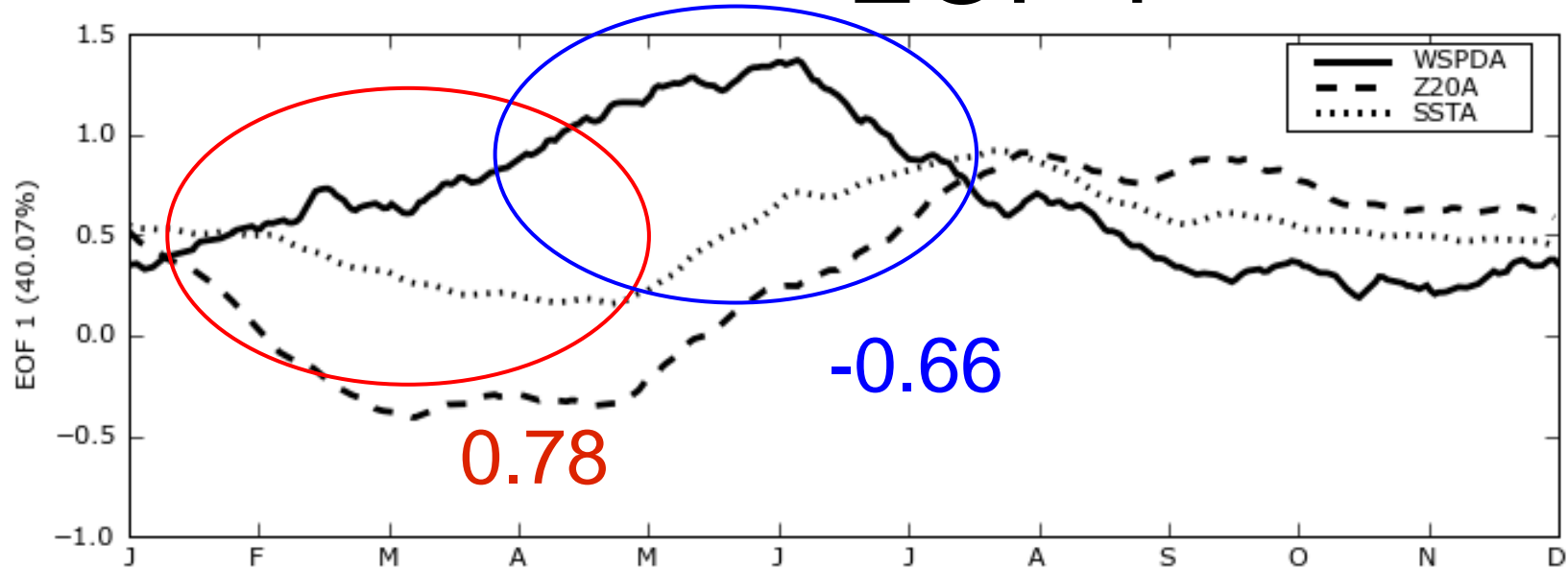
EOF 2: 23%



# EOF 2



# EOF 1



# Conclusions

- The Atlantic ENSO mode has two modes:
  - a remotely forced mode (Pacific ENSO response)
  - a local mode of interaction
- More data or modeling studies are necessary to understand the role of ocean dynamics