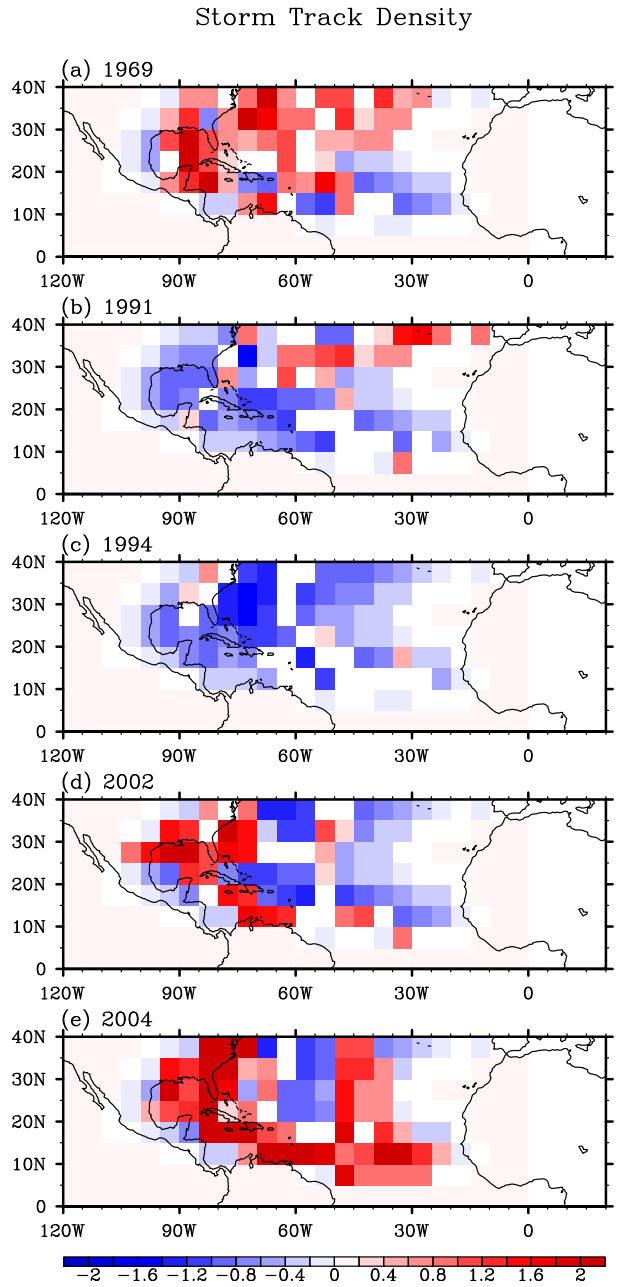
Auxiliary Material:

Auxiliary Material Table S1. Same as Table 1 except that all values are averaged for the most active Atlantic hurricane season of August to October.

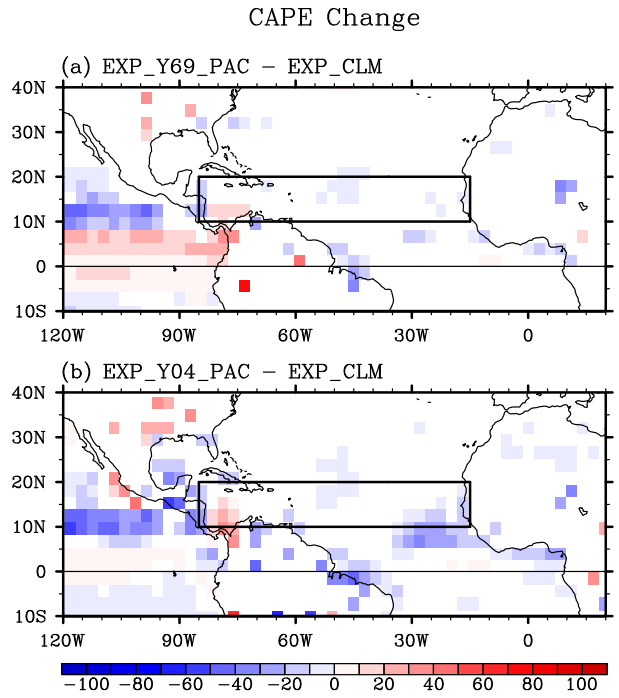
Year	Niño4 (^{o}C)	AWP (%)	VWS (m/s)	CAPE (J/kg)	TS (#)	HR (#)	MH (#)	ACE (10^4 kt^2)	USL (#)	IAS (#)
1969	**0.69**	**41.6**	**-0.4**	**200.1**	**16**	**11**	**5**	**155.5**	2	**8**
1991	**0.64**	*-28.7*	*0.5*	*-191.9*	*6*	*4*	2	*38.8*	*1*	*1*
1994	**0.73**	*-52.0*	-0.1	*-248.7*	*3*	*1*	*0*	*10.9*	*0*	*2*
2002	**0.66**	**14.9**	*1.5*	16.1	10	*4*	2	*62.3*	*1*	**7**
2004	**0.59**	**47.0**	**-1.4**	**116.0**	12	**8**	**5**	**215.9**	**5**	**7**
CPW mean	**0.66**	4.6	0.0	-21.7	10	6	3	96.7	2	5
Climatology	0.00	0.0	0.0	0.0	8	5	3	93.1	1	4

Auxiliary Material Table S2. Prescribed SSTs in the tropical Pacific (15^{o}S-15^{o}N; 200^{o}E-cast of the Americas) and tropical North Atlantic (5^{o}N-30^{o}N; coast of Americas-coast of Africa) for additional NCAR atmospheric general circulation model experiments. The SSTs outside of the tropical Pacific and tropical North Atlantic are prescribed using climatology.

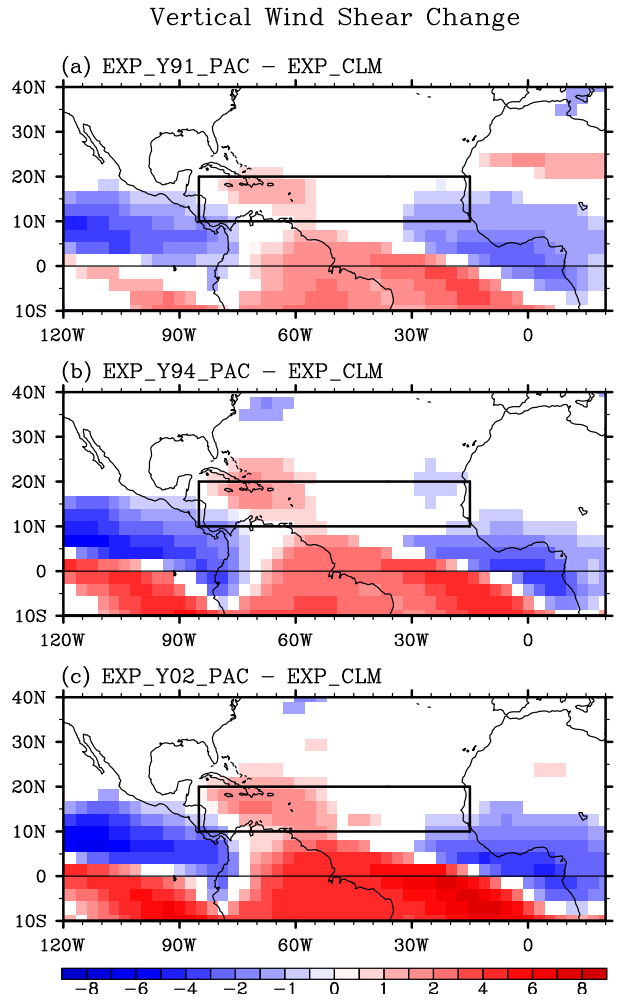
Experiment	Tropical Pacific SST	Tropical North Atlantic SST
EXP_Y91_PAC	1991	Climatology
EXP_Y94_PAC	1994	Climatology
EXP_Y02_PAC	2002	Climatology



Auxiliary Material Figure S1. Storm track density anomaly in August-October for (a) 1969, (b) 1991, (c) 1994, (d) 2002, and (e) 2004. The storm track density anomaly is computed by counting the number of storms passing through each $5^{o} \times 5^{o}$ grid box in August-October relative to climatology. For instance, a storm track density anomaly of -2 means that 2 lesser storms passed through that grid box compared to climatology. Only significant values at 95% or above based on a student-t test are shown.



Auxiliary Material Figure S2. CAPE difference (J/kg) in June-November between (a) EXP_Y69_PAC and EXP_CLM, and between (b) EXP_Y04_PAC and EXP_CLM. Only significant values at 95% or above based on a student-t test are shown.



Auxiliary Material Figure S3. Tropospheric vertical wind shear (200mb minus 850mb) difference (ms^{-1}) in June-November between (a) EXP_Y91_PAC and EXP_CLM, between (b) EXP_Y94_PAC and EXP_CLM, and between (c) EXP_Y02_PAC and EXP_CLIM. For EXP_Y91_PAC, EXP_Y94_PAC, EXP_Y02_PAC and EXP_CLM, the SSTs in the tropical Pacific region (15^{o}S-15^{o}N; 120^{o}E–coast of the Americas) are prescribed with those of 1991, 1994, 2002 and climatology, respectively, while prescribing the SSTs outside of the tropical Pacific using climatology. Each experiment consists of twenty model integrations that are initialized with slightly different conditions to represent internal atmospheric variability. Only significant values at 95% or above based on a student-t test are shown.