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Variability of the Antilles and Deep Western Boundary Currents at 26N in RAPID observations and a high resolution NEMO simulation

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At 26°N where the ocean poleward heat flux is near maximum, the thermocline circulation and subtropical gyre return flow are concentrated in well-organized western boundary currents: the Florida current (FC), confined within the Florida Straits, the Antilles Current (AC) and the Deep Western Boundary Current (DWBC). The last two currents are constrained against the eastern slope of the Bahamas. The existence of the AC as a persistent feature has been in question since Leetmaa et al. (1977) showed a near balance between the FC and the interior Sverdrup transport at this latitude suggesting that an AC was unnecessary to close the wind-driven circulation.
A high-resolution configuration (1/12°) of the NEMO model as well as RAPID observations will be used to investigate the variability of the Antilles current at 26°N at seasonal to interannual time scales. The aim of this study is also to investigate the link between the Antilles current and the DWBC as well as the source of variability of these two currents.
The impact of the Rossby Waves-like westward propagating features on the transport of both the Antilles Current and DWBC will also investigated.