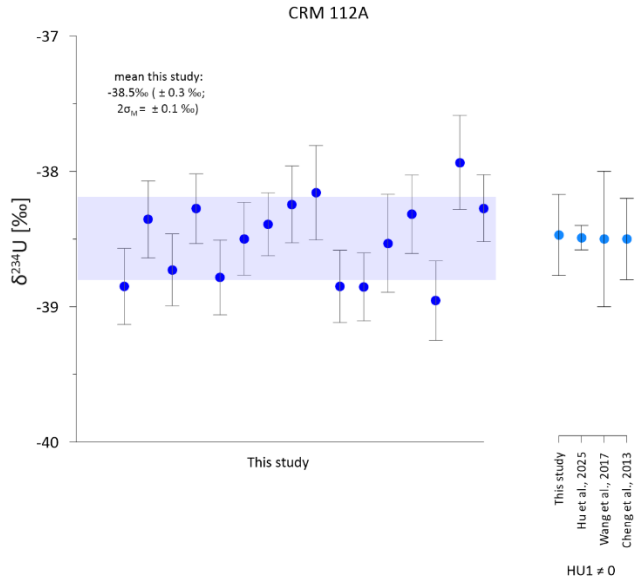

Figure 2: The CRM112A standard was repeatedly measured via the bracketing method with the HU-1 standard.The mean value of −38.5 ‰ ± 0.29 ‰ is in line with other studies (Cheng et al., 2013; Wang et al., 2017; Hu et al., 2025).

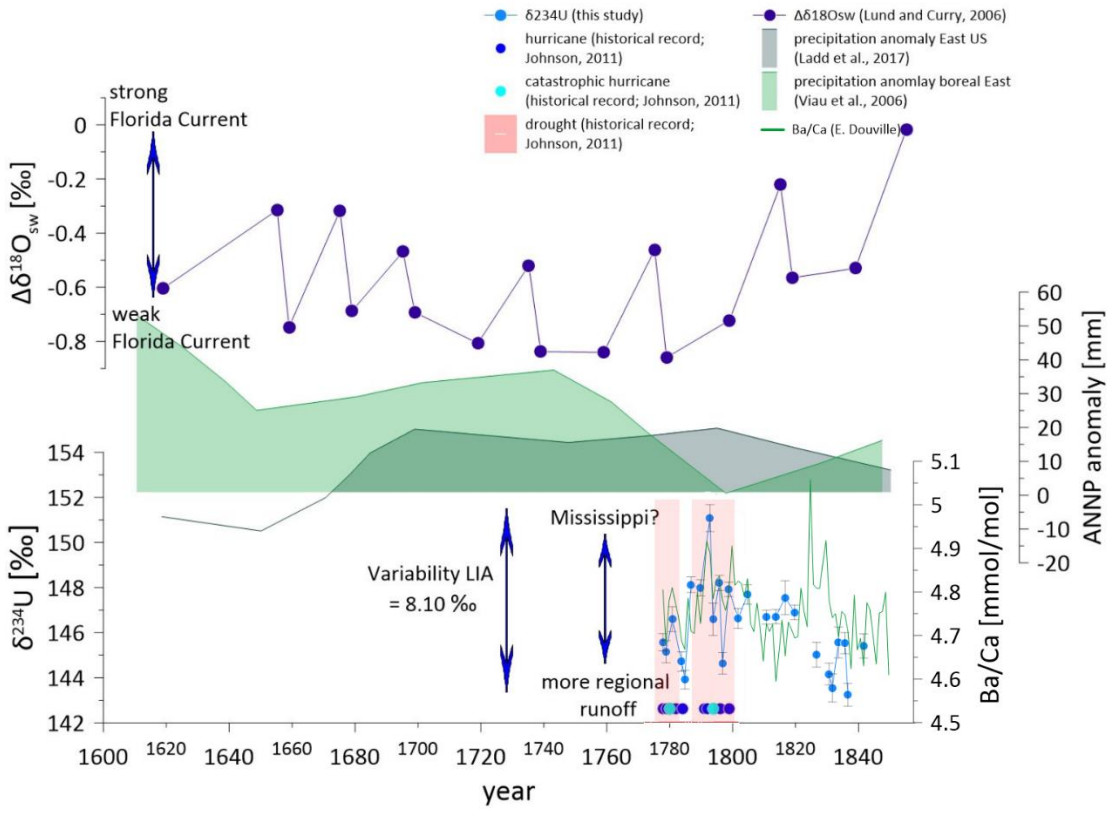

Figure 5: $\delta^{234}U$ values (blue) from 1778–1830 plotted together with the timing of hydrological events documented in historical records (Johnson, 2011), indicating times of high hydrological fluctuation with droughts (red), hurricanes (dark blue), and catastrophic hurricanes (light blue). The green line shows Ba/Ca ratios of the coral core corresponding to the $\delta^{234}U$ values. During these times, the $\delta^{234}U$ values exhibited high variability, ranging from 143.40 ‰ to 151.50 ‰ in 1792. According to the present age model this high value occurred during a period of recurrent major hurricanes. Florida Current strength is inferred from $\Delta\delta^{18}O_{sw}$ differences between the Gulf of Mexico and the Bahamas Channel (purple; (Lund & Curry, 2006)), where more negative values reflect a weaker current during the LIA. Superimposed precipitation

anomalies over eastern North America (dark green; (Ladd et al., 2018)) and the boreal east (light green; (Viau et al., 2006)) show enhanced precipitation during this same interval, consistent with a weakened Florida Current and elevated variability in $\delta^{234}U$ values.

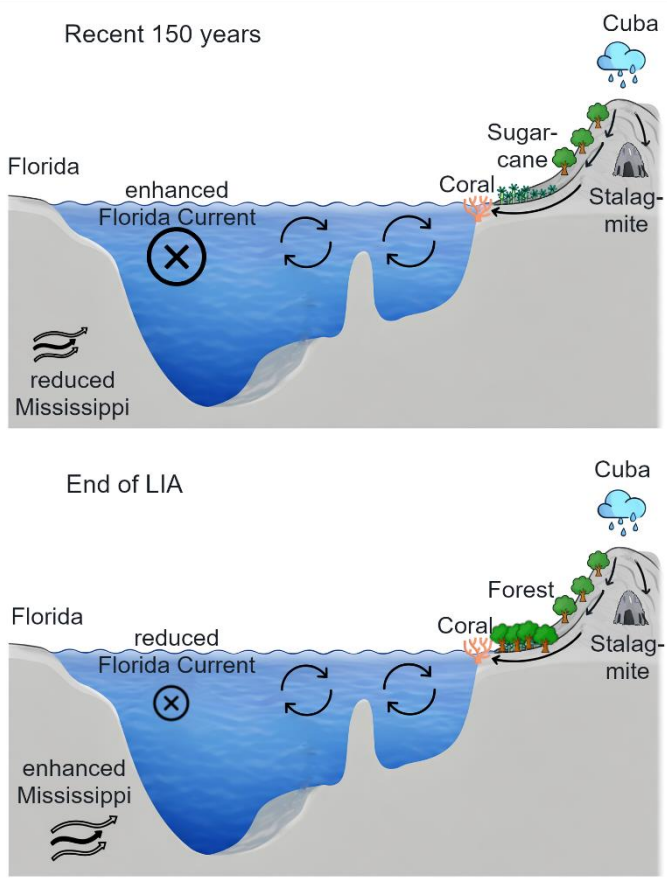

Figure 6: Schematic comparison of environmental conditions during the end of the Little Ice Age (LIA) and the last ~150 years. The lower panel depicts the terminal LIA, characterized by enhanced Mississippi River discharge, reduced Florida Current strength, and predominantly forested land cover in Cuba. The upper panel represents the recent period, with reduced Mississippi influence, strengthened Florida Current transport, and expanded agricultural land use in Cuba. Arrows indicate relative changes in river input, ocean circulation, and terrestrial runoff pathways affecting the coral site north of Cuba.