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New Heat flow data in the Jamaica and Windward Passages

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New heat flow data, acquired in offshore Haiti, Cuba and Jamaica during the HAITI-TWIST cruise (2024), will be presented. These data complete earlier acquisitions from the HAITI-SIS cruise (2012) discussed in Rolandone et al. (2020). This study based on in-situ heat flow measurements and Bottom Simulating Reflector (BSR) derived heat flow, revealed a regionally low heat flow of approximately 40-50 mW/m², with some localized high values exceeding 80 mW/m². Elevated heat flow was observed only near major strike-slip fault systems (SOFZ and EPGFZ) or smaller reverse faults. Since conductive mechanisms such as shear heating and heat refraction cannot account for the extreme values (100-180 mW/m²), we suggested that fluid circulation may be responsible for the high fault related heat flow. The main objective of the new heat flow data acquisition was to identify anomalies potentially caused by fluid-driven heat advection along and across the two strike-slip fault systems (SOFZ and EPGFZ). We acquired 24 new marine heat flow data using a typical shallow probe technique that measures the thermal gradient and thermal conductivity at different intervals of the first 6 m of the seafloor sediments. Temperature gradients were measured in-situ using autonomous high-precision temperature probes attached to a core barrel while thermal conductivities were measured onboard using a needle probe instrument on recovered sediment cores. Two modes of acquisitions were used (1) single penetrations with sediment recovery, and (2) a faster pogo-type acquisition without sediment coring.