The Holocene Australian Summer Monsoon variability revealed by IODP Expedition 356 sediments

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The Australian Summer Monsoon (ASM) provides rainfall in northern Australia and becomes weaker or stronger in association with high-latitude climate change during the Holocene. The International Ocean Discovery Program (IODP) Expedition 356 Indonesian Throughflow cored in the shallow continental shelf (< 200 m water depth) of northwestern Australia and recovered sediments of Miocene to Holocene age at Site U1461. These sediments were directly derived from the northwestern Australian continent. Radiocarbon dating on macrofossils and planktonic foraminifera shows that the upper 15-m section at Site U1461 records Holocene climate variability in the northwestern Australia. X-ray elemental analysis results in this section are interpreted as an indicator of sedimentary environmental changes. We demonstrate that Holocene climate variability in the northwestern Australia is recorded at Site U1461 where sediments preserve evidence of link the ASM with Northern/Southern Hemisphere climate changes.

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