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Event deposits and geological significance of Upper Paleozoic in eastern North China

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Based on core observation, drilling and logging data, field investigation and laboratory analysis data, Upper Paleozoic event sedimentation and its geological significance in eastern North China were systematically studied. The results show that there are five typical types of event sedimentation in the study area, including volcanic events, seismic events, transgression events, storm deposits, large-area peat swamping events and extensive depositional discontinuity events.The tuffs formed by volcanic events can form tuff reservoirs with devitrification micropores as the reservoir space, and different types of tuffs can indicate changes in tectonic attributes at the margin of the basin. Tuffs and transgressive limestones can be used as marker beds for the stratigraphic division and contrast. The stepped fault formed by the earthquake event is favorable to the secondary migration of oil and gas. Large-area peat swamping event can form the widespread coal seam with a stable thickness. Extensive depositional hiatus event can form bauxite and weathering-leached manganese ore. Event-induced coal and bauxite are also good sequence interfaces.