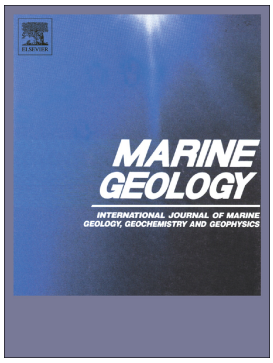

Sea-level change and super storms; geologic evidence from late last interglacial (MIS 5e) in Bahamas and Bermuda offers ominous prospects for a warming Earth

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Sea-level change and superstorms; geologic evidence from late last interglacial (MIS 5e) in Bahamas and Bermuda offers ominous prospects for a warming Earth

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Key words: MIS 5e sea-level rise, superstorms, megaboulders, chevrons, wave runup, climate change

Highlights:

- The geology of the last interglacial, MIS 5e, shows that very significant changes in climate and sea level can occur under modestly higher global temperatures (1-2 °C) and CO_2 levels at less than 300 ppm.
- Early MIS 5e sea level was stable for several thousand years much like the Holocene. This stability at +2.5 to +3.0 m was followed by a rapid rise of several meters that is penecontemporaneous with global climate disruptions late in MIS 5e.
- Carbonate platforms offer unique oceanographic, physiographic and sedimentary environments that respond to, and preserve brief and intense events, unlike many other coastlines of the world.
- The Bahamas and Bermuda preserve abundant evidence of intense storminess associated with carbonate deposits during higher sea levels in late MIS 5e, including wave-transported megaboulders, chevron storm ridges in lowland areas, and wave runup deposits on older built up dune ridges.
- The full impact of anthropogenic CO_2 forcing and global warming on climate and sea level is unknown, but evidence from MIS 5e in the Bahamas and Bermuda suggests that the oceans and