

Interactive comment on “Ice melt, sea level rise and superstorms: evidence from paleoclimate data, climate modeling, and modern observations that 2 °C global warming is highly dangerous” by J. Hansen et al.

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Response to SC C5270: ‘Archer’s comment on Hansen’s new SLR paper’, Rud Istvan, 27 Jul 2015

SC C5270 hardly deserves any reply, as it relies on unsubstantiated character assassination and its only scientific reference is irrelevant. We made no assertion about the speed of early Eemian sea level rise. Our paper is concerned with the rapid sea level rise in the late Eemian. Many geological records smooth our rapid change, e.g., be-

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cause of bioturbation of sediments ocean cores have coarse temporal resolution and can even fail to record a rapid rise and fall of sea level. Fortunately an alternative technique is provided by coral reef backstepping (see Blanchon reference given in our paper), as we explained:

Blanchon et al. (2009) used a sequence of coral reef crests from northeast Yucatan peninsula, Mexico, to investigate sea level change with a higher temporal precision than possible with U-series dating alone. They used coral reef “back-stepping”, i.e., the fact that the location of coral reef building moves shoreward as sea level rises, to infer sea level change. They found that in the latter half of the Eemian there was a point at which sea level jumped by 2-3 m within an “ecological” period, i.e., within several decades.

Istvan’s assertion that there is not sufficient ice (in the ice sheets) with direct access to the ocean is wrong. We provide references in our paper for the volumes of ice with outlets to the sea below sea level, which is easily enough to provide several meters of sea level rise.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 20059, 2015.