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Cosmic Rays, CO_2 Runaway, Sea Level Rise and Severe Global Flooding JOHN T.A. ELY, University of Washington — In CO_2 runaway, the ocean surface layers (which in 1999AD contain, in each 100 m of depth, more CO_2 than the entire atmosphere) can suddenly become a continuous strong source of CO_2 as surface temperatures rise, because the solubility of CO_2 decreases 3 percent per degree Celsius. The evolving CO_2 increases atmospheric greenhouse longwave opacity providing positive feedback accelerating the CO_2 release (without the long time scales of deep ocean processes). Because the present atmospheric CO_2 concentration, 380ppmv, is already so much higher than the 270 ppmv thought to be the preindustrial Pleistocene maximum, it now presents a climate warming forcing so strong that orbital and other climate forcings, which in the past have brought about periodic ice ages, are not able to restore the glaciating mode.

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