

We thank Dr. Schmittner for his constructive comment on our manuscript. To facilitate the discussion, we have copied his comment below in black and inserted our response in green.

I suggest to the authors to consider our relevant recent modeling work, which suggests a different mechanism for the CO<sub>2</sub> increase during H-events. As shown in Schmittner and Galbraith (2008, *Nature*, 456, 373-376, doi:10.1038/nature07531) an AMOC shutdown causes a decrease of the efficiency of the biological pump, which leads to an increase in atmospheric CO<sub>2</sub> consistent in both amplitude and rate-of-change with ice core observations. Schmittner and Lund (2015; *Climate of the Past*, 11, 135-152, doi:10.5194/cp-11-135-2015) show that this leads to a decrease of surface ocean (and atmospheric) δ<sup>13</sup>C that is particularly strong (more than 0.5 permil) in the South Atlantic (their Fig. 5G).

Comment #1 - A similar observation was also raised by Referee #1 and Referee #2. Please refer to our Comment #1 to Referee #1 or Comment #1 to Referee #2.