Interactive comment on “A new Himalayan ice core CH₄ record: possible hints on the preindustrial latitudinal gradient” by S. Hou et al.

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Figure 1. CH₄ profiles from three Himalayan ice cores. The average 700 ppbv preindustrial CH₄ level depicted by polar ice cores is indicated with a horizontal light blue line. The solid circles in the ER Core2002 panel stand for the filtered 15 samples that are used for the discussion.

Figure 2. Distribution of CH₄ mixing ratios against gas content of the same samples in ER ice cores, with an exponential fit. Samples with CH₄ mixing ratios over 1800 ppbv are excluded. The solid circles stand for the filtered 15 samples that are used for the discussion, with the red solid circles for the industrial records and the black solid circles for the preindustrial records.
Figure 3. The background CH4 profiles of Core2002 with comparison to the GRIP (Chappellaz et al., 1997) and Law Dome ice core (MacFarling-Meure et al., 2006) records.

Figure 4. CH4 latitudinal gradients for the Present-Day and the Preindustrial periods simulated with the LMDz-INCA climate/chemistry coupled model (left vertical axis), with comparison to the ER (this study) and the GRIP (Chappellaz et al., 1997) records (right vertical axis).

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Fig. 1.
Fig. 2.
Fig. 3.
Fig. 4.

[Graph showing CH₄ gradient (ppbv) vs. Latitude for Present Day and Preindustrial conditions with markers for ER and GRIP.]