

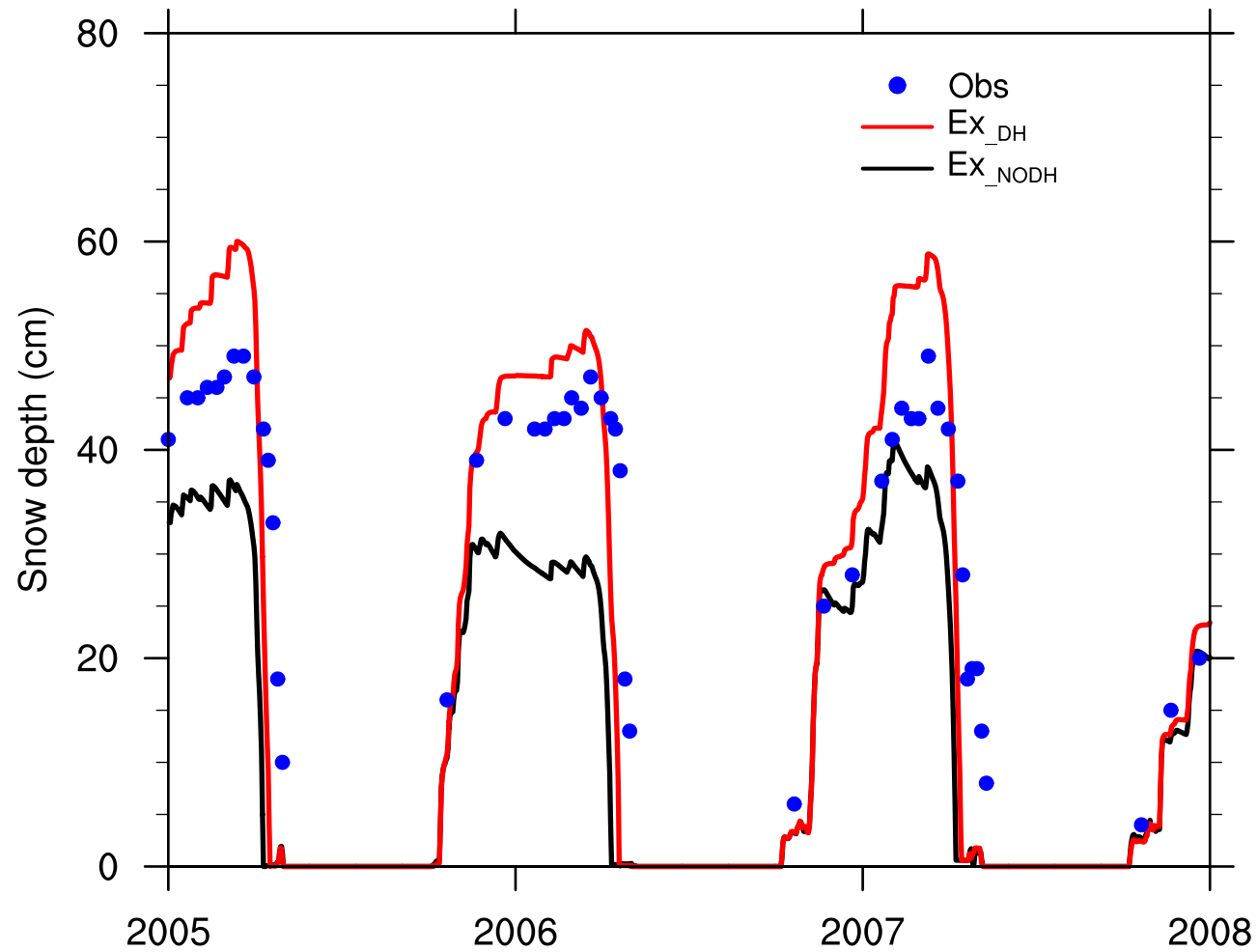


Figure S1. Interannual variability of simulated snow depths with the observation. This period (2005–2007) has recorded as relatively heavy snow years for the recent observational decades (Iijima et al., 2010).

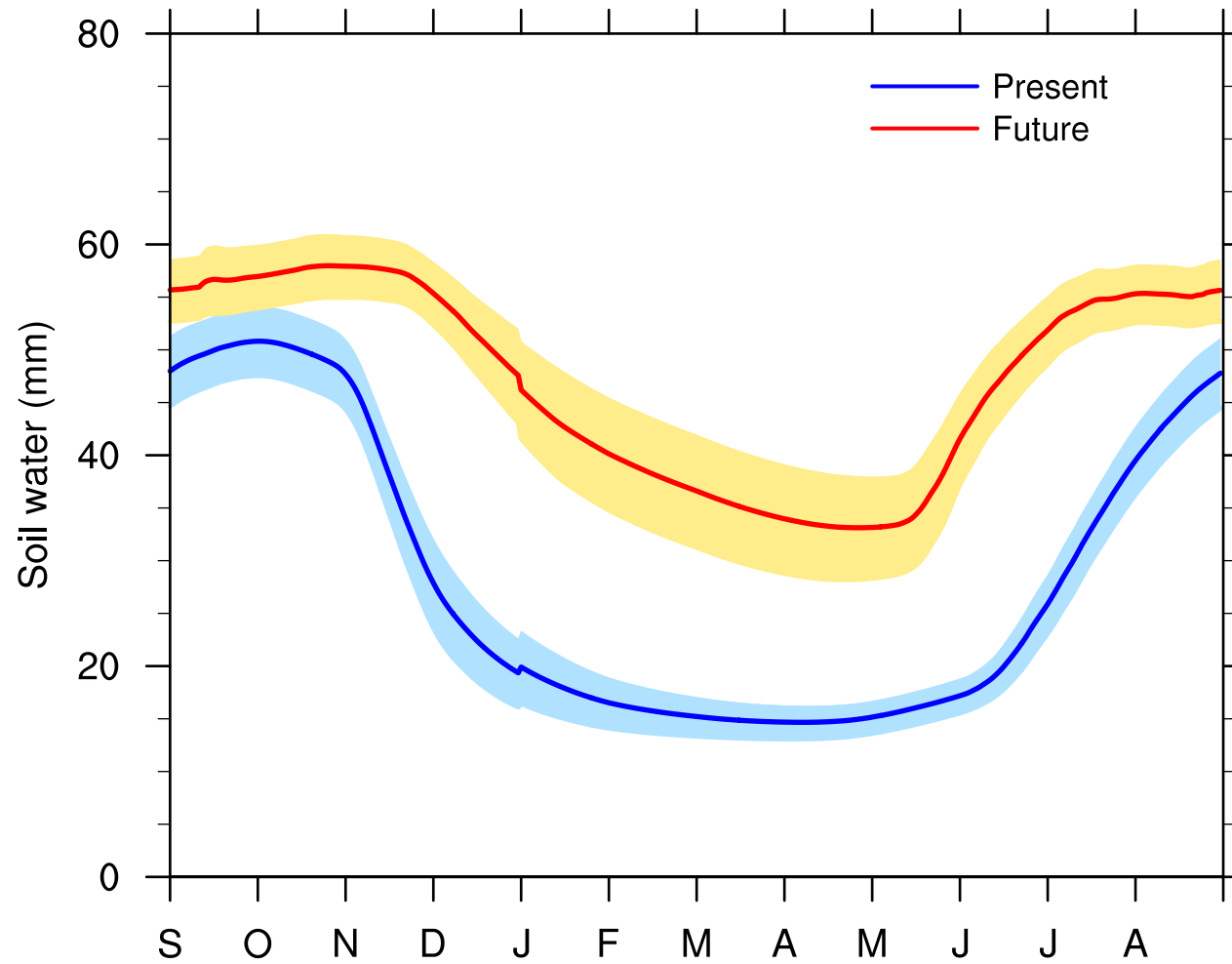


Figure S2. Seasonal variations of unfrozen soil water at the column of 70–200 cm simulated under present (1980–2016) and future (2081–2100) climate conditions. The soil column was identified as layers that were warmer during summer (June–August) the future than the present, as shown in Fig. 11.