

Figure S1. Photographs of on-site sampling. Notes: A corresponds to the edge of the alpine lake, where the water level is high and the soil is basically saturated year round; B corresponds to the alpine grassland in the middle of the slope, where the soil is relatively moist; and C corresponds to a higher slope position, where the soil is relatively dry.

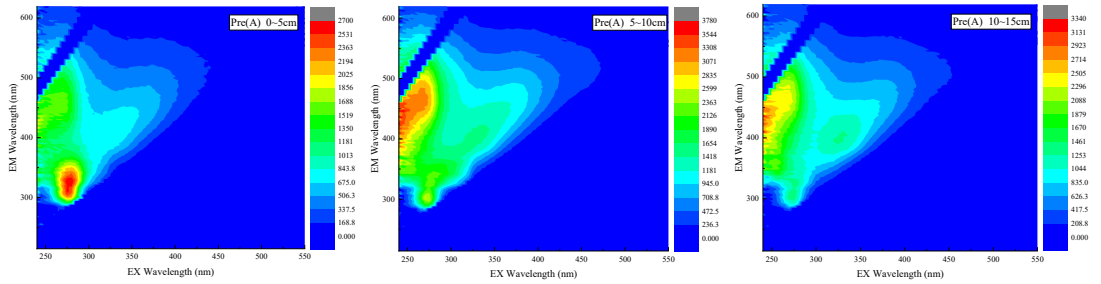


Figure S2. Three-dimensional fluorescence spectra of soil DOC at position A. Notes: Pre(A) is the preincubation soil layer at position A.

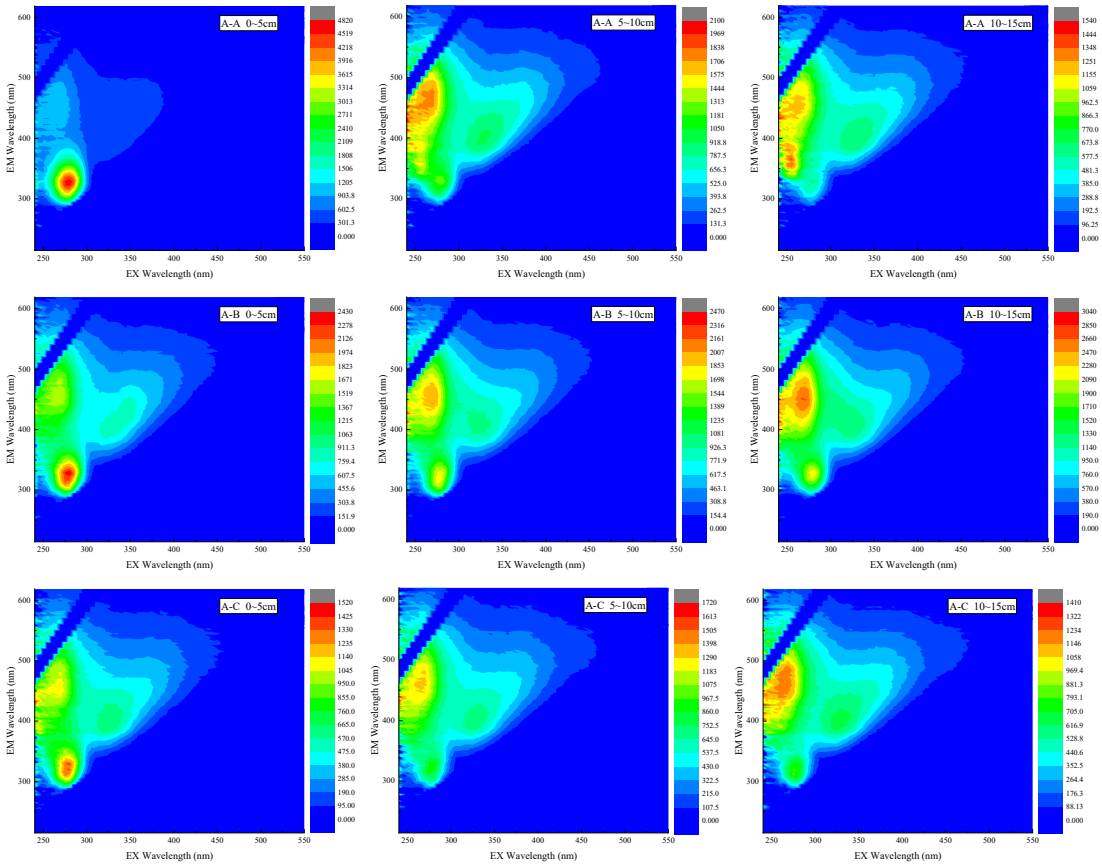


Figure S3. Three-dimensional fluorescence spectra of soil DOC after 480 d of in situ incubation experiments. Notes: A-A, soil from position A was incubated at position A; A-B, soil from position A was incubated at position B; A-C, soil from position A was incubated at position C.

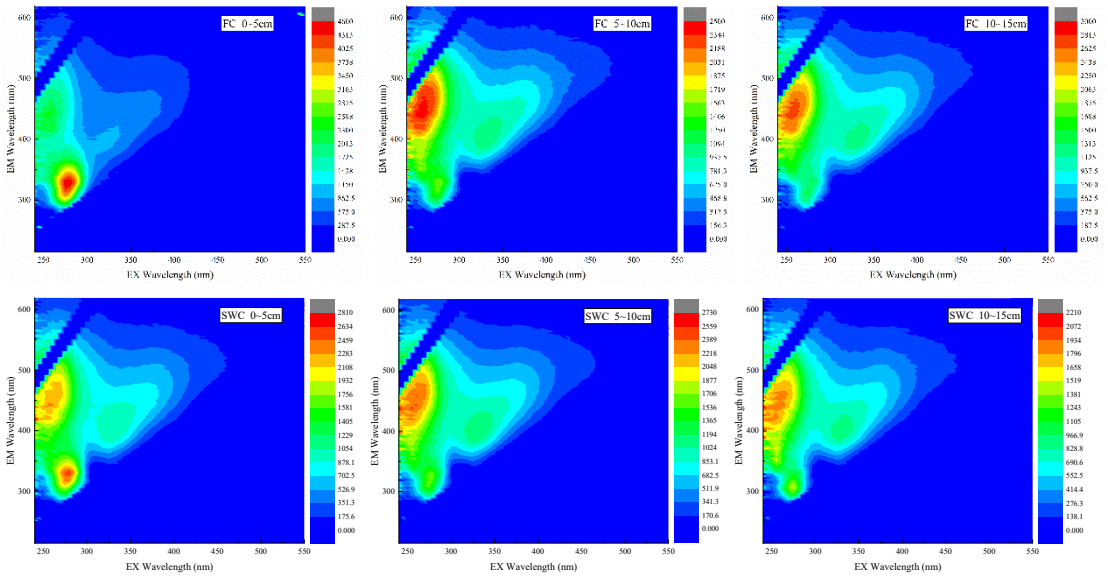


Figure S4. Three-dimensional fluorescence spectra of soil DOC after 80d of controlled laboratory incubation experiments. Notes: FC, field capacity; SWC, saturated water content.