

Dear editor,

I appreciate your patience and help! Below please find a point-by-point response to the comments. The response is provided in **blue color** whereas replaced and new text in the manuscript is indicated by *italic blue* font.

1. Lines 276-279: 'First, during weathering Ca in the top part is transferred downward and there precipitate along fractures which were formed by physical weathering and/or rock relaxation. Second, during burial process Ca may be transferred by fluids from underlying or overlying formations, depending on hydraulic conditions.'

This should be rewritten. If the content refers to a scenario that you consider to have taken place it should be in the past tense; if it is a description of a general scenario present tense is fine, but it should be written with the underlying uncertainties in mind (e.g. may be transferred downward').

And this part has been written as "First, during weathering in the top part Ca may be transferred downward and precipitate there along fractures which were formed before by physical weathering and/or rock relaxation. Second, during burial process Ca may be transferred by fluids from underlying or overlying formations, depending on hydraulic conditions." **(line 276-279)**

2. Line 353: 'in both, basaltic' Delete comma.

The comma has been deleted. **(line 353)**

3. Line 398: 'influence for' Should be 'influence on' or 'implications for'

The title has been changed to "Burial diagenesis and its implications for weathering intensity evaluation". **(line 398)**

4. Line 411: 'ESEM imaging proofed kaolinite in two morphologies' Replace 'proofed'. 'indicated'?

The "proofed" has been replaced by "indicated" **(line 411)**.

5. Please use xxx°C (not xxx °C; i.e., with a space) throughout the manuscript.

The spaces between numbers and °C have been deleted throughout the manuscript.

6. Please fix the grammatical issues highlighted in **red** in the following sentences:

6.1. Line 419-421: 'the Ca and Na within the I/S in this part, **may from** the original smectite, and in this part, the Ca and Na may not further depleted during the overprint, and the **influence to** the CIA and PIA values for evaluating the weathering intensity is negligible. The remaining secondary **minerals** in the lower part (14.3-19.3 m) is illite''

This part has been written as "the influence on the CIA and PIA values for evaluating the weathering intensity is negligible. The remaining secondary mineral in the lower part (14.3-19.3 m) is illite". **(line 419-420)**

6.2. Lines 425-426: 'Therefore, the CIA and PIA values [**presented?**] here for weathering intensity evaluation **is** acceptable'

This part has been written as "the depletion of Ca and Na content should also be limited as well as the CIA and PIA values." **(line 423-424)**

6.3. Lines 426-427: 'Similar **with** the basaltic andesite, in the gabbroic diorite part, the **predominated first secondary** minerals formed by weathering was smectite according to the A-CN-K diagram'

This part has been written as "Similar to the basaltic andesite, in the gabbroic diorite, the first secondary minerals formed by weathering predominantly was smectite according to the A-CN-K diagram." **(line 424-425)**

6.4. Lines 429-431: 'And in the topmost part, this influence should be **maximal**, with the **decrease content** of the secondary minerals towards the lower part, this influence will also decrease.'

This part has been written as "In the topmost part, this influence should be highest and decreases with decreasing content of the secondary minerals towards the lower part." **(line 427-428)**

6.5. Lines 490-491: 'which indicate a temperature **nearby** 200 °C'

The "nearby" has been replaced by "around". **(line 487)**

6.6. Lines 491-492: 'And also, emplacement of a calcite vein is coupled with recrystallization of quartz by low-temperature migration recrystallization **is also found** (Fig. 2C), which **indicate** a temperature of around 300°C'.

This part has been written as "Emplacement of calcitic veins is partly coupled with

low-temperature migration recrystallization quartz (Fig. 2C), which indicates a temperature of around 300°C". (line 488-489)

6.7. Line 494-495: 'homogenization temperatures from fluid inclusions in hydrothermal veins with up to ca. 290 °C '

The "with" has been deleted. (line 491)

6.8. Line 496: 'Subsidence ceased in the uppermost Jurassic according to conserved sedimentary sequences in southern Germany'

This part has been written as "Subsidence ceased in the uppermost Jurassic as evident from surrounding sedimentary sequences in southern Germany" (line 492-493)

6.9. Line 500: 'A further pulse of exhumation is proofed for the middle to late Pleistocene'

This part has been written as "A further pulse of exhumation is proven for the middle to late Pleistocene" (line 496-497)