

# ***Interactive comment on “Carbon isotopes of dissolved inorganic carbon reflect utilization of different carbon sources by microbial communities in two limestone aquifer assemblages” by Martin E. Nowak et al.***

**Martin E. Nowak et al.**

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Dear referee,

Thank you for handling our manuscript. I would like to send you answers to your comments. The comments were constructive and helpful. We improved our manuscript where it was necessary and clarified and deispeled reservations where it was possible.

General comment 1: We tried to improve our introduction and outline more clearly the objectives of our study.

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General comment 2: The conclusions are based on the results we obtained from the HCZE. We think that our results can be extrapolated to other aquifers, which have a similar geological and geochemical setting. This is clarified in the text.

General comment 3: Table and table captions were improved.

Specific comments:

P1L27: Ok

P3L1: Ok, the word traditional was removed

P3L28: Ok

End of introduction: We stated the objectives in the introduction, which were to use stable and radioactive carbon isotopes to evaluate processes that influence carbon cycling within our aquifer transect. We additionally used molecular techniques to identify microbial key players that contribute to carbon cycling. We hypothesised that CO<sub>2</sub> fixing microorganisms contribute to carbon cycling and this is reflected in DIC isotopes. This is in our opinion clearly stated in the text.

P6L10: We used standard blue colour Duran bottle caps with inlay rings which provide gas tightness.

P6L20: Ok

P6L29: The sample was extracted from the 1L schott bottle with a gastight syringe in a glove bag filled with N<sub>2</sub> and added to the vials via a butyl rubber septum.

P6L30: Yes, they were flushed with N<sub>2</sub>

P7L14: The source of contamination is not so relevant, because we used blanks to correct for it.

P8L1: Ok

P8L21: Ok

P8L22: Ok

P12L1: Ok

P13L2: Ok, digits were adjusted P13L7: Ok, this was adjusted

P15L28: Ok

P16L12ff: 3H was not measured, but it is planned in future.

Tables:

Table 1: Ok

Table 2: Ok

Table 4: Ok

Figures:

Figs. 2, 3, 6 and 7: The figures could not be adjusted further.

Fig 6b and 6c: Ok

Technical comments:

P5L10: Ok

P6L2: Ok

P7L18: Ok

P15L29: Ok

P18L13: Ok

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2016-534, 2016.

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