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Interactive comment on "Boron incorporation in the foraminifer *Amphistegina lessonii* under a decoupled carbonate chemistry" *by* K. Kaczmarek et al.

Anonymous Referee #2

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This paper reports d11B values and B/Ca ratios determined for skeletal carbonate samples of A. lessonii cultured under strict control of pH and [CO3 2-]. The authors' data clearly show that the d11B values of A. lessonii solely depend on pH and are independent of [CO3 2-] while the B/Ca ratios seem to be controlled by B(OH)4-/HCO3- ratio of culture media. These results are important for understanding the carbonate d11B and B/Ca as proxies of seawater carbonate system. This paper also includes the application of a new technique for simultaneous determination of d11B and B/Ca by using LA-MC-ICP-MS+OES, which can contribute significantly to the researches of this field in terms of analytical methodology. Thus I recommend that this paper is suitable for publication in Biogeosciences. Although the cause of an offset from theoretically

expected value and a strong inter-specimen variation observed for foraminiferal d11B is not specified here, the authors' conclusion that these observations cannot be explained solely by sample size, vital effects, etc. is important. The authors may discuss the possible reason why the d11B offset from the theoretically expected value seems to vary with pH.

Interactive comment on Biogeosciences Discuss., 11, 16743, 2014.