

Interactive comment on “Upper Jurassic carbonate buildups in the Miechów Trough, Southern Poland – insights from seismic data interpretation” by Łukasz Słonka and Piotr Krzywiec

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The article is a valuable paper, contains new data and interesting interpretations, and is one of the first attempts of interpretation of seismic profiles in the Miechów Through and adjacent areas. However, several corrections and additions concerning mainly terminology seem necessary. Some key references have also been omitted.

Terminology The authors use the term "sponge megafacies" (lines 105, 153-158, 383) according to Matyja & Wierzbowski (2006). The widespread appearance of calcified

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siliceous sponges in all Upper Jurassic successions of the northern Tethyan shelf commonly leads to the opinion that these organisms were the principal rock-forming components. Consequently, all these diversified facies are categorized into the far simplified term “sponge megafacies” (Matyja, 1976 fide Trammer, 1982; Matyja & Pisera, 1991). As the principal rock-forming components of these rocks are microbial structures (what Gwinner, 1971 has already pointed out) the term “microbial-sponge facies” or even “microbial facies” seems to be more adequate.

Literature In 2019, the PhD of A. Urbaniec was defended. It is an admittedly unpublished work, but the second author (PK) was reviewer. The dissertation concerns identical issues of seismic data interpretation in the Carpathian Foredeep. This work must be quoted and discussed. The authors conclude their remarks on stratigraphy on works from 2007-2009 (lines 136-137; 153-158). There is no basic work here of Olszewska et al. (2012) containing a critical analysis of previous work. This is a necessary item for quotation and brief discussion. The paper has not included issues related to differential compaction, although the authors devote a lot of space to it (lines 318-325; 380-381). This applies to publications Kochman & Matyszkiewicz (2013) - mechanical compaction and Matyszkiewicz & Kochman (2016) - chemical compaction. However, other works are cited (Matyszkiewicz et al., 2006, 2016 - line 381), in which only short paragraphs are devoted to the compaction.

Figures Figs. 8-15. In the lower parts the figures contain interpretations. This is not an interpretation from geological point of view because the vertical scale is given in seconds and not in meters. The interpreted seismic profiles should contain the vertical scale in meters. At least an additional explanation of the authors is required here. Fig. 16. In my opinion comparing of the wall of “Młynka” quarry (about 20 meters wide) with seismic profile with a length of about 5 km is inappropriate. Such a procedure can prove everything and negate everything.

List of additional references Gwinner, M.P. (1971). Carbonate rocks of the Upper Jurassic in SW-Germany. In: Müller, G. (ed.), Sedimentology of parts of Central Europe.

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Kramer, Frankfurt a. M., pp. 193-207. Olszewska, B., Matyszkiewicz, J., Król, K. & Krajewski, M. (2012). Correlation of the Upper Jurassic-Cretaceous epicontinental sediments in southern Poland and south western Ukraine based on thin section. *Biuletyn Państwowego Instytutu Geologicznego*, 453: 29–80. Kochman, A. & Matyszkiewicz, J. (2013). Experimental method for estimation of compaction in the Oxfordian bedded limestones of the southern Kraków-Częstochowa Upland, Southern Poland. *Acta Geologica Polonica*, 63: 681-696. Matyszkiewicz, J. & Kochman, A. (2016). Pressure dissolution features in Oxfordian microbial-sponge buildups with pseudonodular texture, Kraków Upland, Poland. *Annales Societatis Geologorum Poloniae*, 86/4: 355–377. Urbaniec, A. (2019). Lithofacial development of the Upper Jurassic and Lower Cretaceous deposits in the Dąbrowa Tarnowska-Dąbica area based on the 3D seismic interpretations. Unpublished PhD Thesis. Faculty of Geology, Geophysics and Environmental Protection of AGH, Kraków.

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