



A new outcrop displaying cyclic steps in Tabernas basin turbidite system (SE Spain)

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Cyclic steps are more and more often reported in sand rich systems in various settings, such as proglacial deltas, prodelta or turbidite systems. A good example has been described in the Tabernas basin, Postma et al. 2014, in messinian turbidites. A new and very spectacular outcrop have been recently discovered, in the same stratigraphic unit in another locality in the northern margin of this basin.

This outcrop is about 60 m long and 20 m high. By comparison with the previous one where cyclic steps have been reported, it is located not far from the contact with the basement of the Sierra de Los Filabres which is bounding the basin toward the North. Its means in a very proximal setting. The cyclic steps are interbedded with sheet like turbidites pointing toward the South and they are superimposed over a large scale MTC which seems to locally control the sea floor topography. Like most of these features, they shows an upslope migration. They are characterized by a 30 m wavelength and about 4 m thick. They consist predominantly in medium to coarse grained sandstones in the stoss side of the bedforms and a much coarser material in the lee side including up to 15 cm mud clasts, draping the toe of the erosional features.

Underlying basement can be mapped, it revealed a break in the topography, probably at the origin of the hydraulic jump, but the morphology tends to suggest that these bedforms occur in an area where the turbidites system widens rapidly.

A photographic drone acquisition allows to perform a very detailed study with an accuracy of 5 cm revealing lot of sedimentological details which could help to improve how such bedforms are developed and preserved in proximal turbidites not far from the updip onlap of the sandstones.