Geophysical Research Abstracts
Vol. 17, EGU2015-6896-1, 2015
EGU General Assembly 2015
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Development of Rudist lithosome on the Cretaceous carbonate platform in Bajestan area, east of Iran

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This study assesses the forming and development of an informal rudist-bearing stratigraphic unit through the platform which has formed a thick succession of carbonate rocks in eastern part of Central Zone of Iran during the Touronian – Santonian (?). To achieve this goal, rudist rich layers in a stratigraphic section around the Bajestan area have been investigated from systematic and paleoenvironmental points of view. In this thick carbonate sequence, a unit composed by congregation of Hippuritid rudists that is completely differs from adjacent carbonate rocks by their thickness (up to two meters) and structure has been observed. This is characterized by very dense paucispecific assemblages of Hippuritids. Vaccinites, the main constituent genus accompanying with the other bioclastic particles derived from them, and rare radiolitid, have been formed this lithosome. The basal boundary of this unit is more or less gradual, in some parts can be either sharp. At the top it is obviously flat which seems to be an erosive surface. In general view, its morphology is lenticular shape, with raised topography at the middle part; laterally extended up to ten meters. Most of specimens preserved in their growth position and preferably oriented from base to top of lithosome. Rudist specimens of this lithosome have been also analyzed from morphological aspect. According to the measured indices, they are belonging to elevator morphotype which have been shaped in low energy environments with high rate of sedimentation. Rudist assemblages are as dense clusters and bouquets. The matrix (if present), involved them, is a wackestone/floatstone rock type with bioeroded rudist fragments. On the basis of rudist lithosome category which has been offered by Stossel & Bernoulli (2000), it can be recognized as type E (dense hippuritid) of this classification, with regards to the faunal composition, structure and internal geometry of this lithosome. This type of lithosome mostly interpreted as having formed in calm and restricted water of the sea-ward margin toward the inner part of platform. From the platform margin, diversity within the lithosomes decreases and also the shape of them tend to be sheet-like.