Regional multichannel seismic reflection profiles have been recorded during MEDISIS survey (conducted in 2002 on board the R/V Nadir) across the Egyptian continental slope, offshore the Nile delta. We report here on the results of this survey and on their interpretation in the frame of the margin overall structure and evolution. The MCS data have been processed using amplitude preserving pre-stack depth migration techniques. The advantage of this method is the aptitude to provide a quantitative, and geometrically correct, image of seismic horizons. Identification of several well-defined reflecting events allow to distinguish three main seismic units: (1) An upper unit is interpreted as the post-rift sedimentary cover of the margin; this unit (thickness on the order of 7 km) includes an undisturbed middle Cretaceous to upper Miocene sedimentary pile covered by thick Messinian (latest Miocene) salt-rich layers and by Pliocene to Quaternary sediments, locally intensively deformed by gravity tectonics (see sequences C, D and E on Fig. 1 & 2); a second, deeper, acoustic unit (6 km thick on average) is interpreted as the Mesozoic syn-rift sedimentary cover of the margin; the end of the last rifting event being underlined by a strong angular unconformity tentatively dated of Aptian age (see unconformity and sequence B on Fig. 1 & 2). Finally, a lower unit may correlate to the thinned continental crust of Africa (12km on average in the studied area) and its pre-rift cover; it is bounded at about 23/25 kilometres below sea floor, by strong, but discontinuous, reflector packages interpreted as indicative of the Moho (see sequence A on Fig. 1 & 2).
Fig. 2: Detail of profile MD08 illustrating the different seismic sequences and their geological interpretation.