Various research groups are investigating the structural characteristics of the Zagros in the different regions of this extensive orogen. The cross sections so far published by these authors show an overall decrease, from the Fars to the Lurestan regions, of the shortening recorded by the cover sequences (Fig. 1). This datum is in substantial agreement with the actual velocity of the Arabian plate which displays higher convergence velocities for the south-eastern corner of the Arabia peninsula (~2.2 cm/y) and lower ones for the north-eastern portion (~1.6 cm/y; Sella et al., 2002).

Nevertheless, the total amounts of shortening represented in these sections are extremely low when compared to the present (and past) velocities of convergence, even using a minimum age of 7.65 Ma for the beginning of folding and thrusting as determined in the front of the Pusht-E Kuh Arc (Homke et al., 2004).
Aim of this study is to synthesize the current knowledge regarding the tectonic structure of the Zagros mountain range by illustrating 3 regional cross sections through the Fars, the Dezful and the Lurestan domains (Fig. 1). These sections depict the folded cover rocks as well as the allochthonous terranes forming its hinterland (Imbricate Zone and Sanandaj Sirjan Zone) and extend at depth to the base of the crust. Despite the difficulty in drawing an unequivocal section at depth because of the lack of deep structural data, several papers seem to converge in a multidetachment system of folds to explain the deformation of the cover rocks (e.g., Molinaro et al., 2004; Sherkati and Letouzey, 2004; Sepehr et al., 2006). However very few of these works propose a satisfactory interpretation for the basement structures, accounting for both the shortenings recorded by the cover and the uplifts of the Fars and the Pusht-E Kuh arcs. Our interpretation for the Lurestan crustal cross-section shows a low-angle thrust involving the entire crust below the Zagros belt, to account for the single topographic “step” that uplifts, in an apparently homogeneous manner, the whole Pust-E Kuh Arc from the Mountain Frontal Flexure to the High Zagros. We also share the interpretation of Agard et al. (2005) regarding the innermost parts of the belt with low angle thrust sheets emplacing allochthonous “terranes” on the thinned Arabian cover successions.

The geometry of the base of crust, which according geophysical data increases slightly in depth towards the inner part of the chain, suggests that this previously thinned continental margin has been subsequently tectonically thickened.

References