TO Brownbag Seminar, Oct 10, 2012

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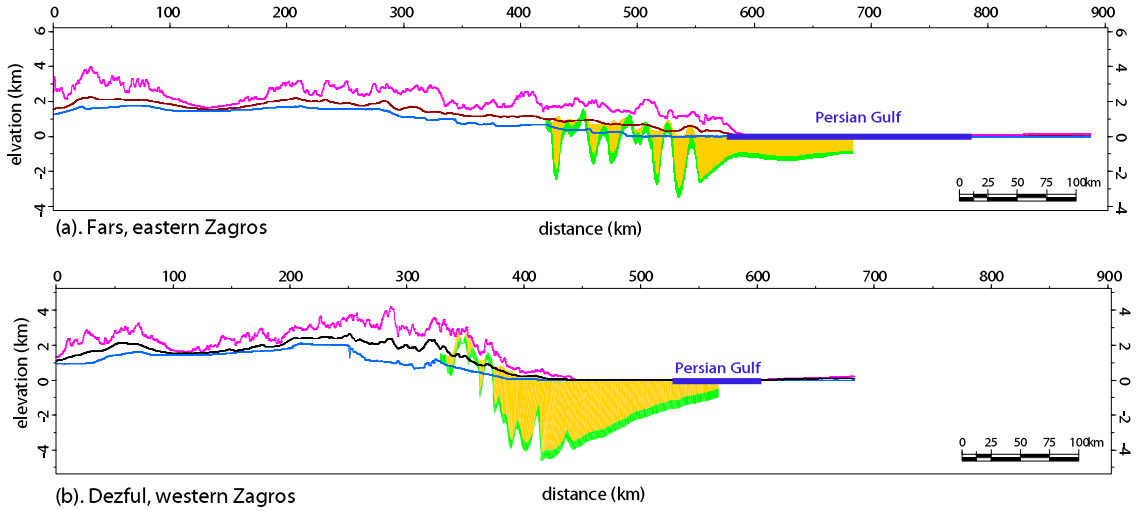
# The Neogene Zagros Foreland Basin

The Zagros Mountain belt is among the most famous geological provinces in the world, renowned for its spectacular whaleback anticlines, extreme seismic activity and its textbook modern carbonate system, in addition to containing abundant oil and gas reserves. It includes a fold-thrust belt in the north and subsequently an extensive foreland basin towards the south. The Zagros fold-thrust foreland basin is the result of the Neogene continent-continent collision between the Arabian and Eurasia plates. The collision causes that the Neogene deposits form an exceptionally well-exposed foreland basin succession that records the evolving landscape along with local climate and tectonics in the region over the last 20 million years. Several recent studies have considered timing of the deformation and the absolute age of the Neogene clastic formations. The Zagros system offers an advantage over many other foreland basins in that it is currently active and has been so for a considerable time period. Thus, it provides an ideal case where one can investigate the transition in time and space between the modern-day palaeoenvironments (e.g. wedge-top, foredeep) and older deposits that were progressively buried and incorporated into the orogen as it widened through time.

The aim of this study is to place the various deposits observed within the context of foreland basin depozones as already established for many other foreland basin systems. In addition try to understand how wedge top rheology, crustal thickening and surface processes behave to develop the Zagros foreland basin. How they change the rate and/or locus of subsidence which is responsible for the creation or destruction of new accommodation space and sediment influx.




*A long N-S topographic cross section across the Zagros fold thrust belt with maximum (pink), mean(black) and minimum (blue) elevations within a 100-km-wide swath extracted from the SRTM 90 m digital elevation model. The Asmari formation (green unit) is extracted from published cross sections and boreholes by National Iranian Oil Company. The Neogene foreland deposits are shown in orange.*