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## Role of structural inheritances in the development of the Mountain Front Flexure in the Lurestan region of the Zagros belt

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The Mountain Front Flexure is a major structure of the Zagros orogenic system, and is underlain by the deeply rooted and seismically active Mountain Front Fault system. These coupled structural features divide the belt from its foreland and their trace is sinuous, forming salients and recesses. The origin and tectonic significance of the Mountain Front Fault system and its sinuosity are still unclear, with most of hypotheses pointing to a strong structural control exerted by geological inheritances. In this work we combine interpretation of seismic reflection profiles, earthquake data, geomorphic analysis, and geological observations, to build a balanced cross section across the Mountain Front Flexure in the Lurestan region. Our data are suggestive of a hybrid tectonic style for the Lurestan region, characterised by a major and newly developed crustal ramp in the frontal portion of the belt (i.e the Mountain Front Fault) and by the reactivation of steeply dipping pre-existing basin-bounding faults, along with a minor amount of shortening, in the inner area. Specifically, the integration of our results with previous knowledge indicates that the Mountain Front Fault system developed in the necking domain of the Jurassic rift system, ahead of an array of inverted Jurassic extensional faults, in a structural fashion which resembles that of a crustal-scale footwall shortcut. Within this structural context, the sinusoidal shape of the Mountain Front Flexure in the Lurestan area arises from the re-use of the original segmentation of the inverted Jurassic rift system.