Loess and Dune Sand as Indicators for Climate Change and Caspian Sea-Level Change in Northern Iran

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The loess/palaeosol sequences along the southern Caspian Lowlands are among the southernmost of the Northern Hemisphere representing important spatial links on climate and environment change between Southeast Europe and Central Asia. These loess/palaeosol records reflect numerous cycles of climate change and landscape evolution during the last interglacial / glacial cycle including periods of more arid and/or more humid conditions. The dust and sand accumulation rates depend on the availability of sediment and thus have been triggered by the sea-level changes of the near-by Caspian Sea. The determination of past dust accumulation rates, the timing of warm-moist and cold-dry events and the timing of volcanic eruptions were determined by Optically Stimulated luminescence (OSL) dating. The accumulation and formation of dunes in the very northern part of Golestan Province strongly depends on climate conditions and sediment availability and hence on sea-level changes.