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Title:	Optical chronology and climatic implication of glacial advances from the southern Ladakh Range, NW Himalaya, India
Authors:	Sharma, Shubhra (/jspui/browse?type=author&value=Sharma%2C+Shubhra)
Keywords:	Paleoglaciation Mid-latitude westerlies Last Glacial Maximum Luminescence dating
Issue Date:	2020
Publisher:	Elsevier
Citation:	Palaeogeography, Palaeoclimatology, Palaeoecology 539,109505
Abstract:	Morphological, sedimentological, and chronological evidence suggests the preservation of three glacial advances of decreasing magnitude in the Puche valley (near Leh), southern Ladakh Ranges. The oldest moraine of Puche Glacier Advance-1 (PGA-1) is optically dated to the early Marine Isotopic Stage (MIS)-2 (31.5 ± 3.3 ka) that persisted until around the global Last Glacial Maxima (LGM) (22.7 ± 1.6 ka). The PGA-2 is optically dated to the post LGM (14.4 ± 1.0 ka) and perhaps was triggered by meltwater pulse (1a?) cooling. The youngest PGA-3 remains undated and could be of Holocene age. The Optically Stimulated Luminescence (OSL) ages suggest a greater role of westerlies in driving the glacier advances during the MIS-2 in the southern Ladakh Ranges and are at variance with the previous suggestions that recommended monsoon driven glacier advances. The OSL ages compared to the previously obtained ^{10}Be surface exposure ages are younger by a magnitude. The study explores probable causes for the variance in two chronologies and suggests employing multiple dating methods to minimize the uncertainty both in terms of age and climatic interpretation.
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