

Figures	Page
Chapter 1: Introduction	
1.1 The processes of luminescence production in an insulating solid.....	11
1.2 Spectrum of daylight intensity as a function of water depth and bleaching.....	16
efficiency with respect to stimulating light wavelength	
Chapter 2: Experimental Procedures	
2.1 Schematic of the instrument used for TL/OSL measurement.....	40
2.2 Single Grain dose calibration and heterogeneity in dose rate.....	43
2.3 Multiple aliquot growth curve and paleodose estimation.....	45
2.4 Partial bleach growth curve and paleodose estimation.....	49
2.5 Single Aliquot Regeneration protocol.....	51
2.6 Single aliquot regeneration (SAR) growth curve and paleodose estimation.....	52
2.7 Detail of Natural sensitivity corrected SAR (NSC-SAR) protocol.....	53
2.8 NSC-SAR growth curve and paleodose estimation.....	55
Chapter 3: Natural Sensitivity Changes During OSL Measurement	
3.1 Correlation of 110°C thermo-luminescence and OSL counts.....	64
3.2 Sensitivity changes due to preheat and OSL measurements.....	66
3.3 Comparison of dose distribution obtained by SAR and NSC-SAR paleodoses.....	68
Chapter 4: Limits and Applicability of Standard Growth Curve	
4.1 Standard Growth Curves (SGC) from various samples in Himalaya.....	73
4.2 A comparison between the SAR paleodoses with SGC-SAR.....	74
Chapter 5: Fluvial sediments in diverse Depositional Settings	
5.1 Location of 1970's flash flood deposits in Alaknanda Basin, Central Himalaya.....	85
5.2 Area of 1970's land slide and the sediment deposit at Srinagar.....	86
5.3 1970's flood deposit at Birehi and Grain size variation with distance.....	90
5.4 Paleodose distribution of the 1970's flash flood sediments.....	91
5.5 Location and stratigraphy of slack water deposit at Raiwala.....	95
5.6 Paleodose distribution of the sediments from Himalaya.....	99
5.7 Location and stratigraphy of sample of Yamuna Ganga mega and Piedmont fan.....	101

5.8 Location of uplifted fluvial terraces in the lower Tista valley.....	108
5.9 Location of samples collected in the raised surface south of mountain front.....	110

Chapter 6: Luminescence Chronology of Fluvial archives: Paleoclimatic and Paleoseismic

Implications

6.1 SAR ages of sediments from terrace T ₁ at Srinagar, Central Himalaya.....	117
6.2 SAR ages slack water deposit at Raiwala, Haridwar.....	120
6.3 SAR ages of Yamuna Ganga mega and piedmont fan deposit.....	124
6.4 Correlation of paleoclimatic record and SAR ages of slack water and fan sediments.....	126
6.5 SAR ages of fluvial terraces and raised surfaces in Tista valley.....	129