

## **Abstract**

El Niño/Southern Oscillation (ENSO) causes marked climate variability in equatorial regions of Pacific Ocean and across other parts of the world. The dissertation focuses on the ENSO impact on the global and region climate with respect to anomalous weather conditions, which are one of the causes of occurrence of natural hazards in Cordillera Blanca and Cordillera Negra Range in Peruvian Andes. In the past, this relatively young mountains were many times affected by natural disasters (floods, flash floods, landslides, earthquakes, extreme meteorological events etc.). The department Ancash suffered from 918 disasters in total 11.000 recorded in the database DesInventar in years 1971-2000. By means of the interpretation of DesInventar data I have found out that the majority part (i.e. up to 87%) of these catastrophes is initiated by extreme meteorological events. Almost all of most frequent “climate” disasters, i.e. floods, flash floods, landslides are triggered by permanent or intense precipitation and fast melting of ice and snow followed by regular rainfall period or by periodical occurrence (3-5 years) of ENSO warm phase. The occurrence of strong phases is confirmed by SST, SOI and MEI index. The temperature growth and increased precipitations during El Niño phenomenon are evidenced by data measured in meteorological stations in Peru and in the department Ancash. Alluvions (239), landslides (83), avalanches, rock slides and ice falls (26) belong to the most frequent disasters (338), which occurred on steep and instable slopes in 1971-2000. I verified by their systematical analysing that their number, temporal and spatial pattern in Peru and department Ancash is significantly influenced by strong episodes of El Niño event.

**Key words:** ENSO, El Niño, La Niña, SST (Sea Surface Temperature), SOI (Southern Oscillation Index), MEI (Multivariate ENSO Index), natural hazards, landslides, Cordillera Blanca, Cordillera Negra, Callejón Huaylas, department Ancash