



ID: P1.2-044

Type: e-Poster

Mechanisms of Gayari Sector Avalanche, Pakistan

Tuesday, 29 June 2021 09:15 (15 minutes)

On 7 April 2012, a massive snow avalanche occurred in the north-western mountains of Pakistan, close to the Indian and Chinese borders. To mitigate its future hazard, different triggering mechanisms have been investigated in this study. The avalanche signal was clearly recorded on both infrasound and seismic stations, located at varying distances between 300 and 450 km. The avalanche occurred within the coda of a 2.8 magnitude deeper earthquake from the Hindu Kush region, located 560 km away. Although the size and impact on the avalanche might be small, the occurrence was part of the accelerated moment release (~ 50 % seismic moment release of total 2 days) three hours before the avalanche occurred. Cumulative seismic moment and peak dynamic stress show a significant increase a month before the avalanche. This sequence was stronger and had highest daily event rate, but interestingly the avalanche occurred within the reference seismicity, rather than the aftershock relaxation phase. The secondary process might be activated or triggering clock might be advanced during this sequence. The presence of cracks within the avalanche were further weakened by extremely low temperatures and accelerated the earthquake phase during 2012.

Promotional text

Primary authors: Mr TAHIR, Mohammad (Centre for Earthquake Studies (CES), Islamabad, Pakistan); Mr BILAL, Saif (Centre for Earthquake Studies (CES), Islamabad, Pakistan); Mr AMIR, Sultan (Centre for Earthquake Studies (CES), Islamabad, Pakistan); Mr MUHAMMAD, Tahir Iqbal (Centre for Earthquake Studies (CES), Islamabad, Pakistan); Mr TALAT, Iqbal (Centre for Earthquake Studies (CES), Islamabad, Pakistan); Mr MOHAMMAD, Ali Shah (Centre for Earthquake Studies (CES), Islamabad, Pakistan)

Presenter: Mr TAHIR, Mohammad (Centre for Earthquake Studies (CES), Islamabad, Pakistan)

Session Classification: T1.2 e-poster session

Track Classification: Theme 1. The Earth as a Complex System: T1.2 - The Solid Earth and its Structure