



Contribution ID: 117 Contribution code: ACS-2

Type: Oral Presentation

Post-glacial wildfire documents in the high mountains of Taiwan

Tuesday, 22 October 2024 15:10 (20 minutes)

Even with annual rainfall > 2000 mm, many wildfires in alpine coniferous forests were reported in the > 3000 m-high mountains of Taiwan (up to 3952 m). Most of these historic wildfires occurred in spring, the driest season in Taiwan, demonstrating their close relationship with climatic dryness. We have undertaken extensive geomorphic surveys in the Taiwan's high mountains and found the prevalence of charcoals, the products of paleo-wildfires, in the < 1 m-thick sandy colluviums capping the mountains (particularly below the bamboo grasslands). So far, these charcoals have yielded as many as 102 radiocarbon dates; the sampling sites of these dates cover most of the major mountain areas. Only two of the dates (9070 –8800 cal BP) from the Nanhu Mountain in northern Taiwan are older than 5 ka; 57 dates cluster around 4780 –3170 cal BP (mostly 4.4 –3.4 ka) with two prominent peaks around 4.3 ka (n = 11) and 3.9 ka (n = 17); other 43 dates are distributed somewhat evenly over the last 3 ka. Our data suggest that after the Holocene climate optimum, the high mountains of Taiwan ever experienced a climate condition dry enough to bred wildfires at a regional scale. We infer that during this dry (and cool) period, aeolian and creeping processes in the region were enhanced, which facilitated the deposition of fine-grained materials on hillslope (and thus the preservation of the charcoals).

Key words: Wildfire; Radiocarbon date; Holocene climate optimum; Taiwan orogen

Student Submission

No

Primary author: Dr HSIEH, Meng-long (National Chung Cheng University)

Co-author: LI, Fang-yu (National Chung Cheng University)

Presenter: LI, Fang-yu (National Chung Cheng University)

Session Classification: Applications in Climate Studies

Track Classification: Applications in Climate Studies