For nearly a century, global climate warming has impacted high latitude and high altitude regions of the earth. The warming trend continues. Boundaries of high-latitude permafrost regions continue to move northward and high-altitude permafrost retreats up slope. At the same time glaciers are receding at alarming rates, and extreme weather phenomena are becoming more common. Issues arising from warming in permafrost regions include thaw (permafrost degradation), cryogenesis, landslides, differential settlement of ground, and changes in vegetation and ecosystems. Our session is organized as follows: (a) Global distribution of permafrost and its evolution; (b) The environmental effects of permafrost degradation; (c) The effect of climate and environment change on permafrost degradation; (d) The effect of permafrost degradation on slope stability; (e) Monitoring and forecasting as well as countermeasures for permafrost degradation and its related problems.