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Introduction.

Sommario/riassunto

The earth’s cryosphere, which includes snow, glaciers and ice caps, ice sheets, ice shelves, sea ice, river and lake ice, and frozen ground, contains about 75% of the earth’s fresh water. It exists at almost all latitudes, from the tropics to the poles, and plays a vital role in controlling the global climate system. It also provides direct visible evidence of the effect of climate change, and, therefore, requires proper understanding of the complex dynamics. This encyclopedia mainly focuses on the various aspects of snow, ice and glaciers, but also covers other cryospheric branches, and provides an up-to-date information and basic concepts on relevant topics. It includes alphabetically arranged and professionally written, comprehensive and authoritative academic articles by well-known international experts in individual fields. The encyclopedia contains a broad spectrum of topics, ranging from the atmospheric processes responsible for snow formation; transformation of snow to ice and changes in their properties; classification of ice and glaciers and their worldwide distribution; glaciation and ice ages; glacier dynamics; glacier surface and subsurface characteristics; geomorphic processes and landscape formation; hydrology and sedimentary systems; permafrost degradation; hazards caused by cryospheric changes; and trends of glacier retreat on the global scale along with the impact of climate change. This book can serve as a source of reference at the undergraduate and graduate level and help better understand snow, ice and glaciers. This will also be an indispensable tool containing specialized literature for geologists, geographers, climatologists, hydrologists, and water resources engineers; as well as to those who are engaged in the practice of agricultural and civil engineering, earth sciences, environmental sciences and engineering, ecosystem management, and other relevant subjects.