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Sommario/riassunto

Understanding the ebb and flow of materials on the earth's surface is vital to comprehending environmental change. We need to differentiate between those that represent a progression of natural events from those that might be human induced. The latter can be managed by changing policies; the former probably cannot. This volume presents what researchers know and do not know about the base (or natural) level of surficial fluxes and their dynamics. Leading experts in the field offer a historical perspective on geofluxes and discuss the cycles of materials on the earth's surface, from weathering processes to the movement of material through the river system and oceans to their deposition. The committee sets research directions in five areas: shallow-water studies, mapping, rates of change, sample dating, and--most critical--understanding whether human influence can exceed the natural variability in geoflux processes. This volume will be important reading for geophysical scientists, researchers, faculty, and students, as well as environmental policymakers.