

**Particle size characteristics of Suspended sediments and subglacial hydrology of Dokriani Glacier, Garhwal Himalaya, India,**

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**ABSTRACT**

Diurnal and seasonal variations in particle size characteristics of suspended sediments of Dokriani glacier meltwater were studied during the 1994 ablation period (May-October). Diurnal suspended sediment concentration curves exhibit two prominent peaks from May to mid-August and only one peak during the rest of the ablation period. The first peak resulting from dominance of fine and medium sand contributed to the rising limb of the diurnal hydrograph, whereas the second peak was dominated by fine and medium silt which coincides with the diurnal discharge peak. The trends observed on the appearance of silts and sand particles on diurnal scales at various stages of the ablation period suggest that the subglacial drainage system comprises a diurnally-reversing hydraulic gradient between the channels and distributed system along with translatory flow through the distributed system. This study suggests that the subglacial zone is the major source of sediments in the Dokriani glacier meltwaters. However, high intensity monsoonal rainfall has contributed supraglacial sediments and resulted in bimodal distributions. Fines (clay to medium silt) are the dominant classes in the suspended sediments except during the spring event; the supraglacial sediments had coarsely skewed distributions.