

Strontium isotope systematics in the Oppstryn drainage basin, western Norway

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The strontium (Sr) isotope composition of runoff and particulate material can be used in catchments to determine the proportion of weathering products originating in areas with different bedrock as a supplement to major ion geochemistry. The Sr budget of a catchment is determined by the relative contributions of erosion and weathering of carbonate rocks versus silicate rocks, but also the preferential weathering of carbonate minerals versus silicate minerals and the contributions from different silicate minerals within the same rock unit. As an example it has been suggested that the importance of carbonate relative to plagioclase weathering could be exaggerated in cases where only the plagioclase-to-kaolinite dissolution reaction is considered (Pretti, Stewart 2002).

Samples of filtered river water and suspended particulate material collected on the filters are col-

lected to estimate the particulate and dissolved loads of runoff from the northwest end of the Jostedal glacier, western Norway. Strontium isotopic fingerprinting will be carried out by analysing the same samples for Sr-87 and Sr-86 isotopes in an attempt to delineate the relative contribution the two to three different major types of bedrock in the area under and adjacent to the glacier.

Strontium isotope systematics could enhance the precision of the more general mass balance which is performed with respect to major in geochemistry in the Oppstryn drainage basin and contribute to understanding the contribution of different types of minerals, rock types and sub-catchments when estimating the overall erosion and weathering in this part of Europe.

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