Name: Algal Stream Catchment

Study sites codes: BS1, BS2, BS3, BS4, BS5

Coordinates: 63.79903° S, 57.87861° W (Outlet)

Altitude: 187 m a.s.l (mean)

Site description:

* Catchment, situated in the northern tip of Ulu Peninsula, James Ross Island, Antarctica, is drained by Algal Stream, which is fed by several snow patches and small hanging glaciers. Main gauging station (AS1) is located ca. 500 m upstream the outlet into the sea and immediately upstream the gorge perennially filled by snow. AS1 delineates the sub-catchment, with characteristic as follows: sub-catchment area is 2.82 km2 (60% of total catchment area), 2% is glacierized, Algal Stream length is 1.65 km (48% of total length).

Measured parameters:

* Q\_AS1: discharge at AS1 site (outlet)
* SSC\_AS1: suspended sediment concentrations at AS1
* XRF\_AS1: elemental composition of suspended sediment at BA1
* WCC\_AS1: cations concentration in water at AS1
* WAC\_AS1: anions concentration in water at AS1
* WT\_AS1: water temperature at AS1
* WT\_AS3: water temperature at AS3
* WT\_AS4: water temperature at AS4

Device information:

* Q\_AS1:
  + Water stage (h): DipperLog F100/M30
  + Discharge (Q): Flowtracker Handheld Acoustic Doppler Velocimeter
* SSC\_AS1: Manual sampling in 220 ml bottles
* XRF\_AS1: XXX
* WCC\_AS1: sampled manually, 100 ml of water was immediately filtered through 0.45 µm and let freeze.
* WAC\_AS1: sampled manually, 100 ml of water was immediately filtered through 0.45 µm and let freeze.
* WT\_AS1: DipperLog F100/M30
* WT\_(AS3, AS6): Minikin Tie (EMS Brno)

Period:

* Q\_AS1: 8 Jan, 2015 – present (continuously)
* SSC\_AS1: 9 Jan, 2016 – present (continuously)
* XRF\_AS1:
  + 2015: 8 Jan – 18 Feb
  + 2016: 9 Jan – 8 Feb
* WCC\_AS1:
  + 2016: 9 Jan – 8 Feb
* WAC\_AS1:
  + 2016: 9 Jan – 8 Feb
* WT\_AS1: 8 Jan, 2015 – present (continuously)
* WT\_(AS3, AS4): 16 Jan 2016 – 7 Feb 2016

Interval of measurement:

* Q\_AS1: 1h
* SSC\_AS1:
  + Sampling:
    - 2016: regularly twice a day (low and high discharge) in Jan and Feb
* XRF\_AS1:
  + 2015: opportunistically in Jan and Feb
  + 2016: regularly twice a day (morning (low) and afternoon (high discharges)) in Jan and Feb
* WCC\_AS1:
  + 2016: once in a day in the afternoon (high discharges)
* WAC\_AS1:
  + 2016: once in a day in the afternoon (high discharges)
* WT (AS1, AS3, AS4): 1h

Notes

* Q\_AS1: rating curve done in 2015, equation: Q = 0.00005e19.56h (r2 = .983), n=7
* SSC\_BS1:
  + Rating curve in 2015, equation:

Published data

* Q\_AS1, XRF\_AS1:
  + Period: 8 Jan, 2015 to 18 Feb, 2015
  + To cite: Jan Kavan, Jakub Ondruch, Daniel Nývlt, Filip Hrbáček, Jonathan L. Carrivick & Kamil Láska (2016): Seasonal hydrological and suspended sediment transport dynamics in proglacial streams, James Ross Island, Antarctica, Geografiska Annaler: Series A, Physical Geography, DOI: 10.1080/04353676.2016.1257914.

Data files: