

## Estimates of Antarctic ice sheet surface accumulation using camera images

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Snow depth measurements from Syowa Station to Dome Fuji using snow stakes at 2 km intervals (e.g., Motoyama et al., 2015) and automatic weather stations (AWS) at four points have been carried out by the Japanese Antarctic Research Expedition as part of a monitoring program for assessing the surface mass balance of the ice sheet. To obtain the daily data for snow surface conditions along a latitudinal transect from the coast to the inland, we have installed digital cameras at four stationary observation points (#1 H180, #2 Mizuho Station, #3 Relay Point, and #4 Dome Fuji. Fig.1) near the traverse routes on November 15, November 23, December 2 and December 13, 2017, respectively (Sugiura et al., 2019).

In this study, the snow depth was estimated from the camera images automatically taken of a red-white pole on the ice sheet. Comparison of snow depths with previous studies using snow stakes (Motoyama et al., 2015) showed that the values were within an approximately reasonable range. We will also compare these snow depth data with AWS-derived snow depth data and discuss some of the problems with the observations.



Figure 1. Stationary observation points.

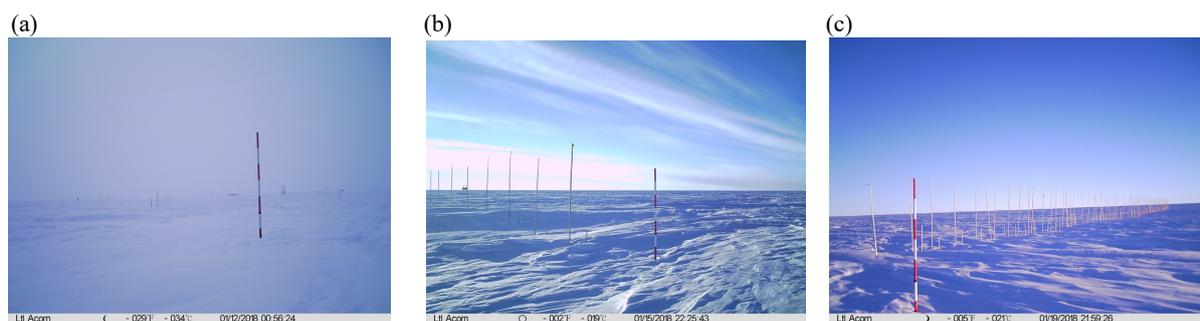


Figure 2. Examples of camera images. (a) #4 Dome Fuji, (b) #3 Relay point, (c) #2 Mizuho Station.

### References

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