

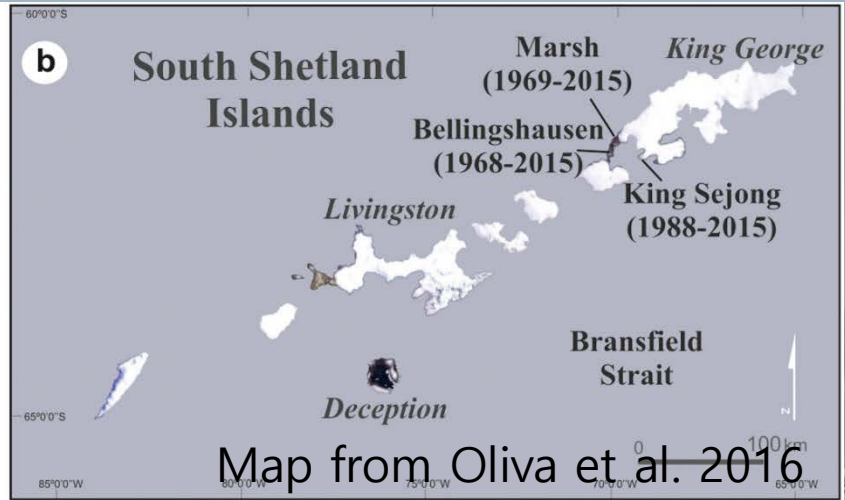
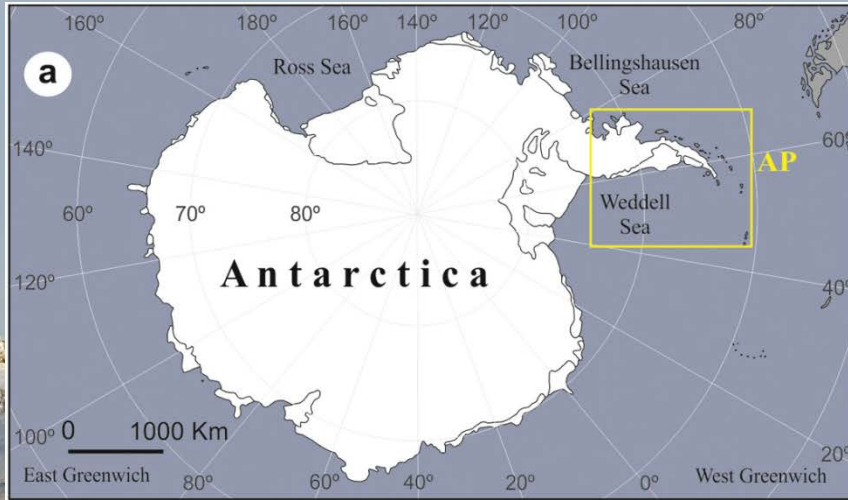
Thirty years of meteorological data observed at the Korean Antarctic King Sejong station

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King Sejong Station (KSJ, WMO #89251)



- **Since Feb. 1988 (30 yrs by 2018)**
(King George Island, 62° 13' S, 58 ° 47' W)

King Sejong Station (KSJ, WMO #89251)

- 17 members in over-wintering team
(one from KMA for observation & forecast)
- app. 100 summertime researchers
- new research building in 16/17 & 17/18

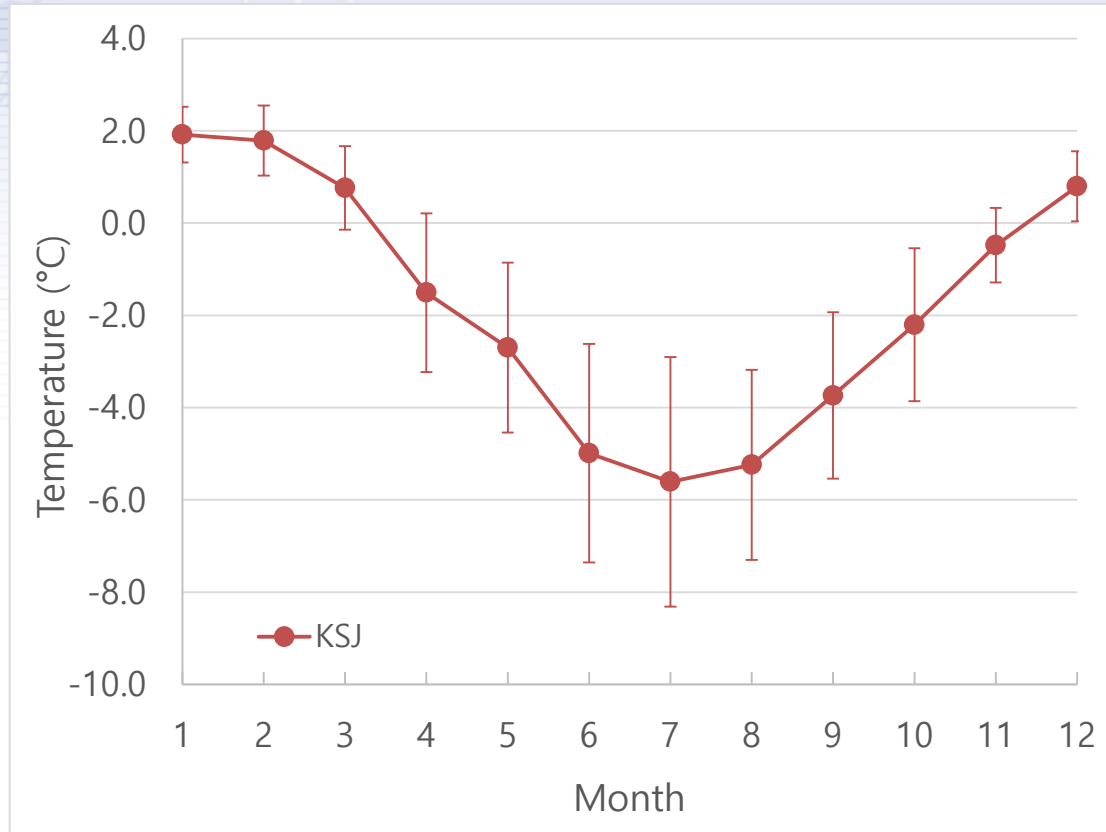


Meteorological Measurements at KSJ

- Automatic Meteorological Observation System:
 - Wind speed / direction (10 m)
 - Temperature, humidity (1.5 m)
 - Precipitation (1.5 m)
 - Atmospheric pressure (1.5 m)
- Radiation:
 - Shortwave
 - Longwave
 - Total UV, UV-Biometer, UV-A meter
- Flux System (mtm, energy, CO₂ fluxes):
 - 3-D Sonic anemometer and IRGA
 - Net radiometer
 - Temperature, humidity



Thirty years of meteorological data at KSJ (air T)



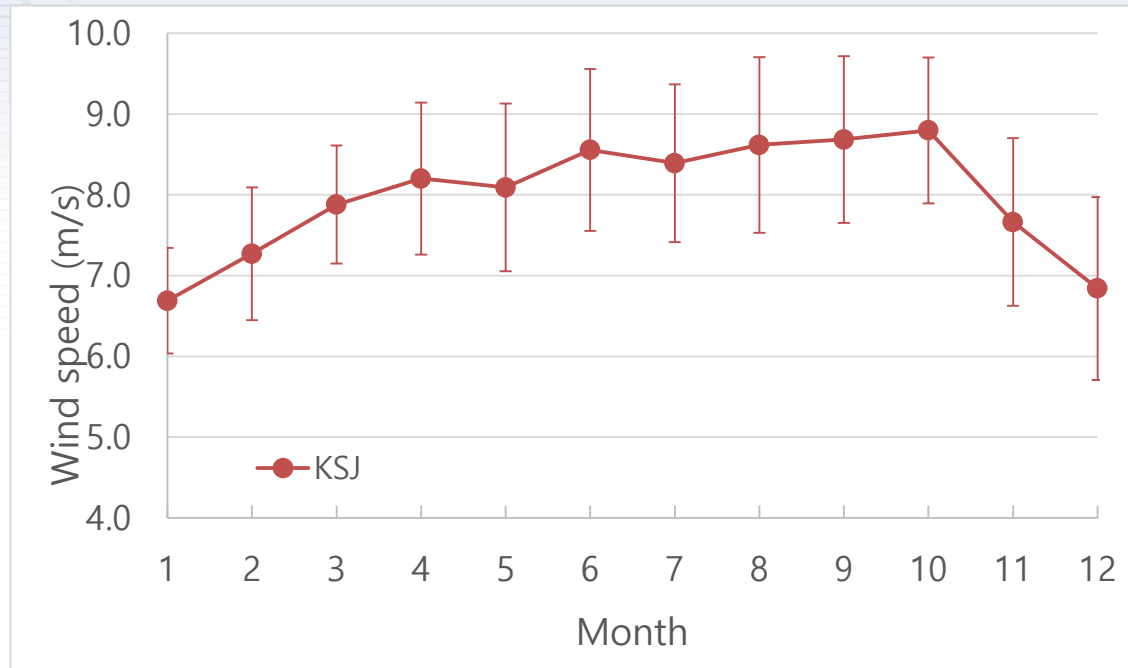
Climatological air temperature (°C) during 1988-2016

Mean Annual Air Temperature: **-1.8 °C**

Min.: **-25.6 °C** (1994.7.24)

Max: **+13.2 °C** (2004.1.24)

Thirty years of meteorological data at KSJ (Wind Speed)



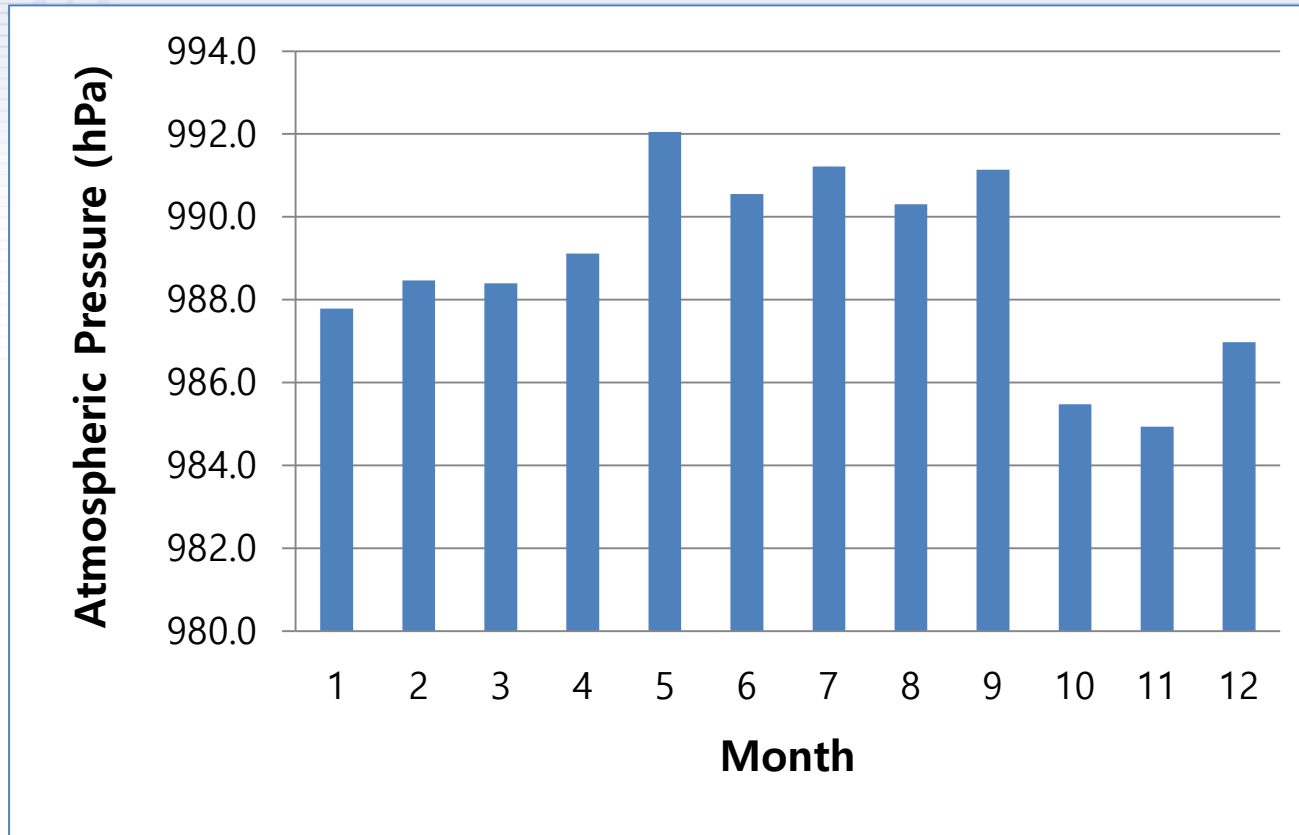
Climatological wind speed (m/s)

Mean Annual **Wind Speed: 8.0 m/s**

Max: **51.9 m/s** (2015.7.1)

Mean Annual Blizzard Occurrence: 23.1 times 274.7 hrs
(~ 11.9 hrs/occ)

Thirty years of meteorological data at KSJ (Pressure)



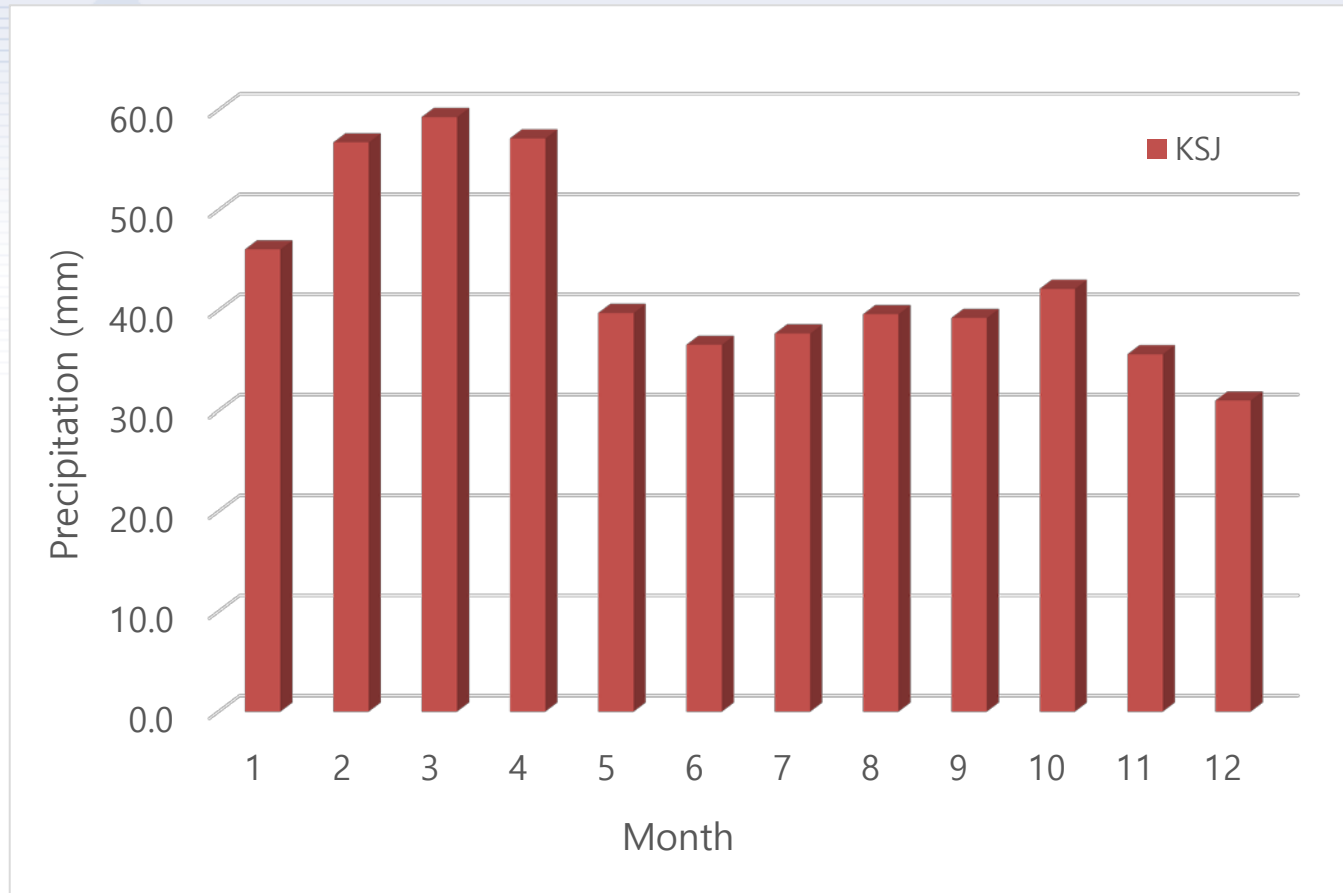
Climatological Atmospheric Pressure (hPa)

Mean Annual **Atmo. Pressure: 988.9 hPa**

Min.: 929 hPa (2015.8.16)

Max: 1035 hPa (2000.9.7)

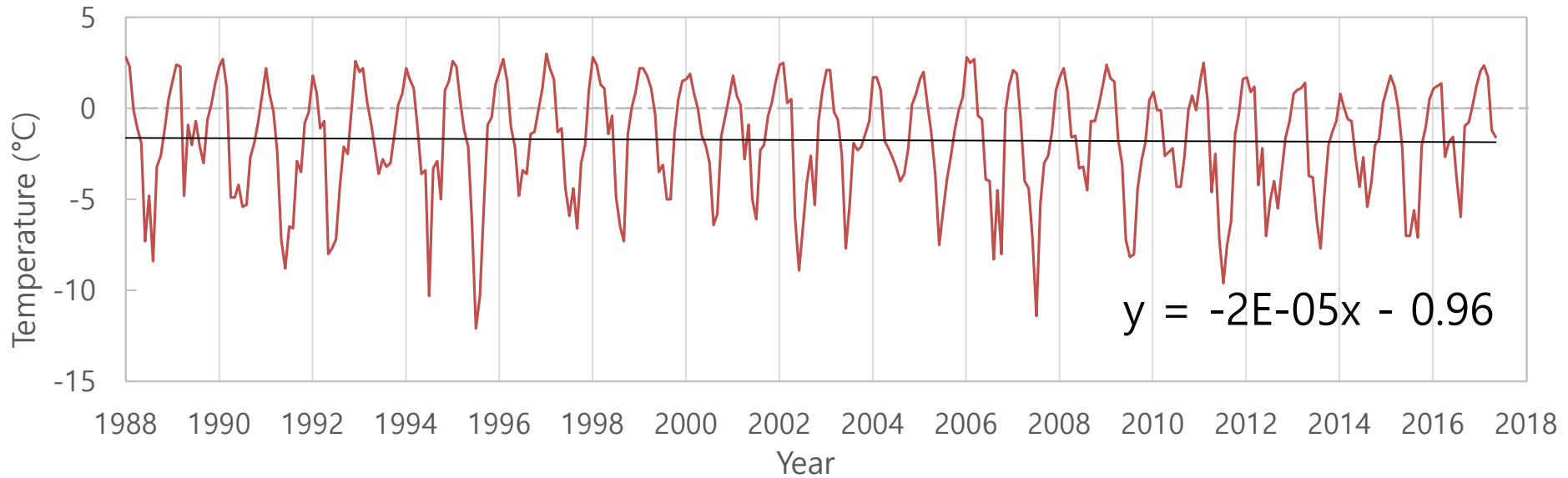
Thirty years of meteorological data at KSJ (Prcp)



Climatological Precipitation (mm) during 1988-2016

Mean Annual **Total Precipitation: 520.2 mm**

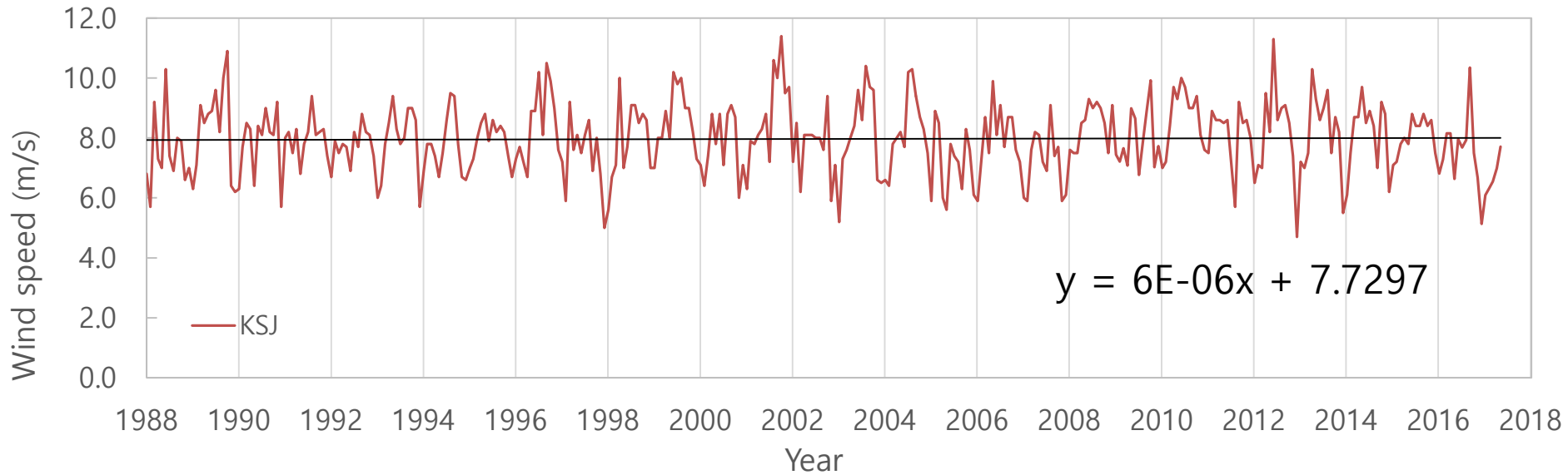
Thirty years of meteorological data at KSJ (air T)



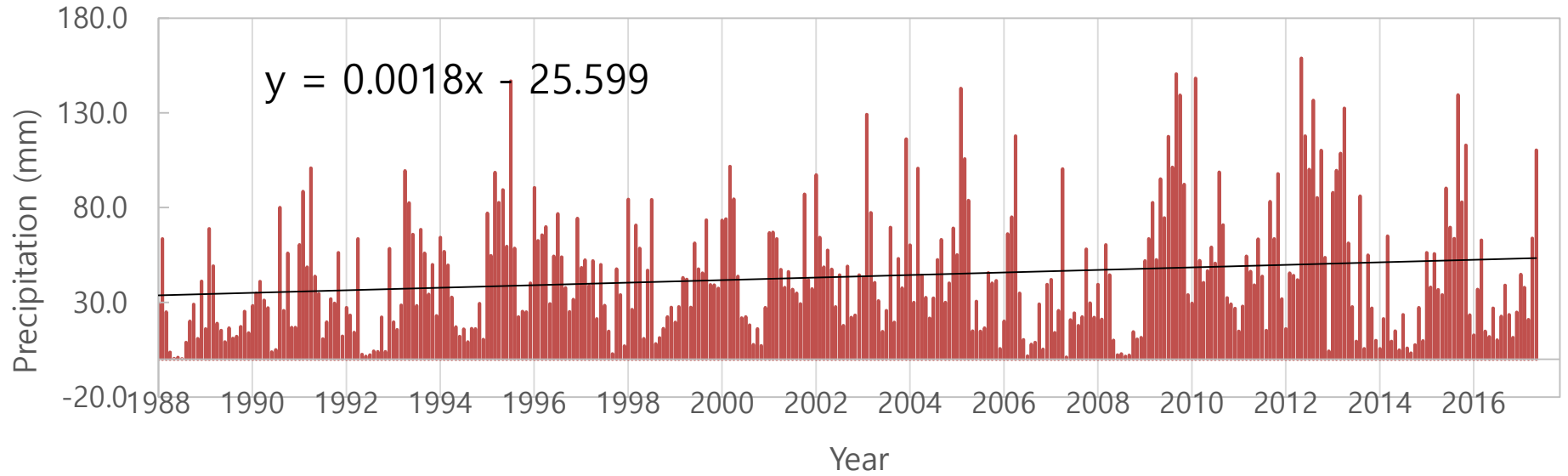
Monthly mean air temperature from 1988. Feb to 2017 May

Very weak cooling trend: -0.0002 °C/decade

Thirty years of meteorological data at KSJ (Wind Speed)



Thirty years of meteorological data at KSJ (Precipitation)



Seasonal airT change (2006-2015 vs 1996-2005)

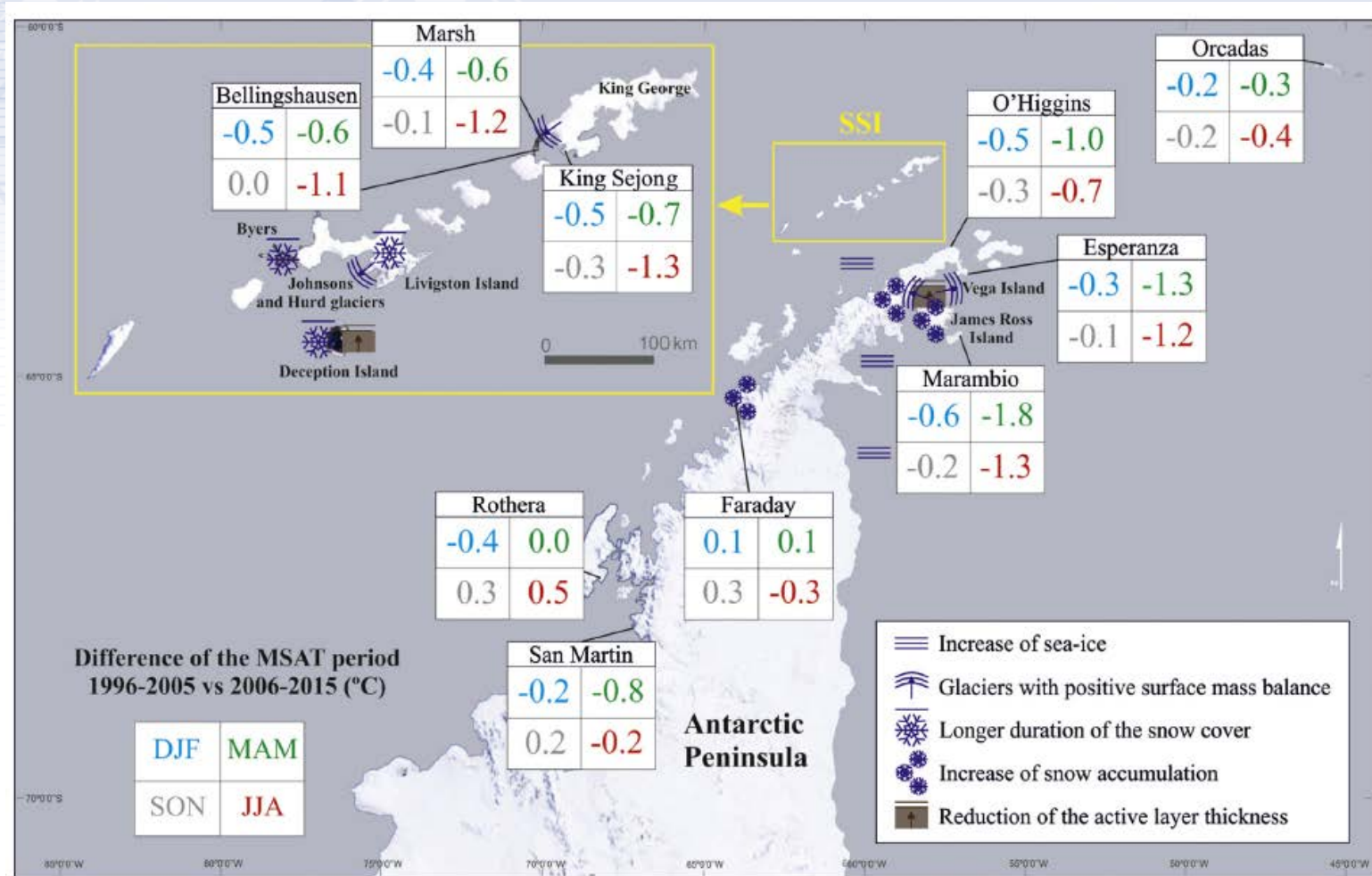
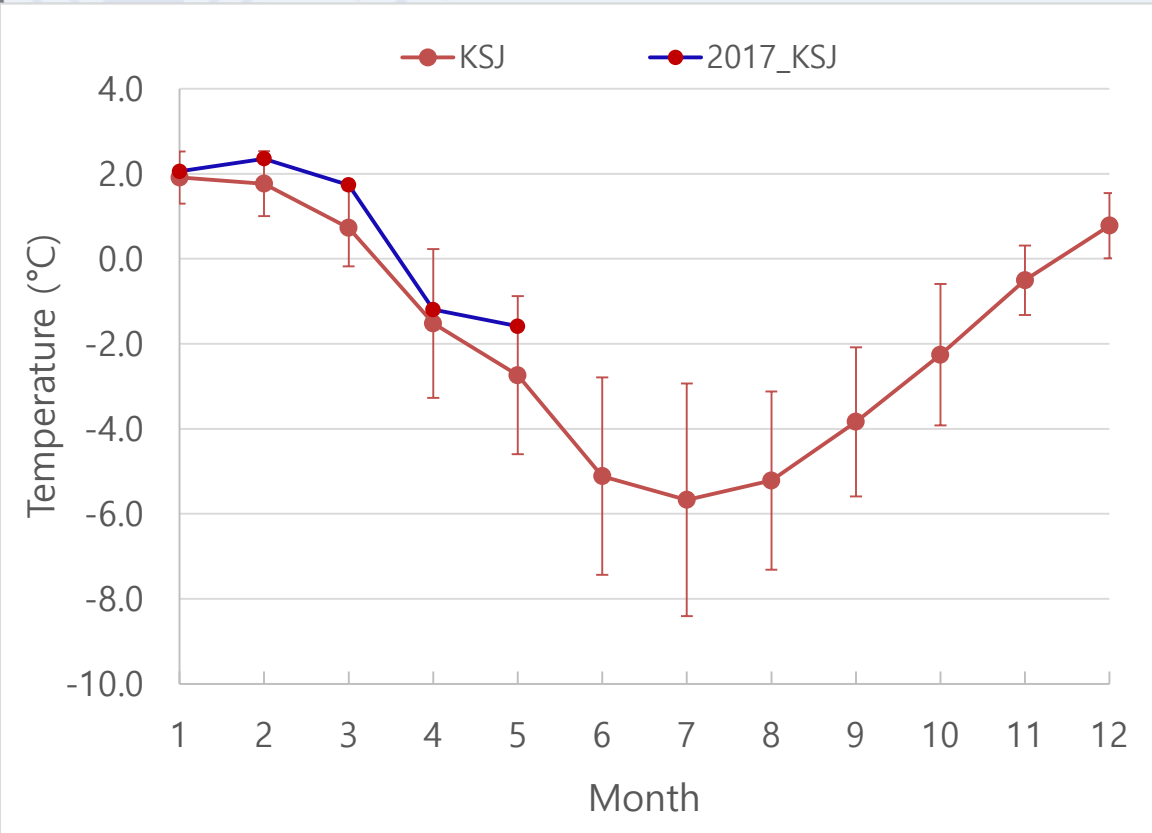


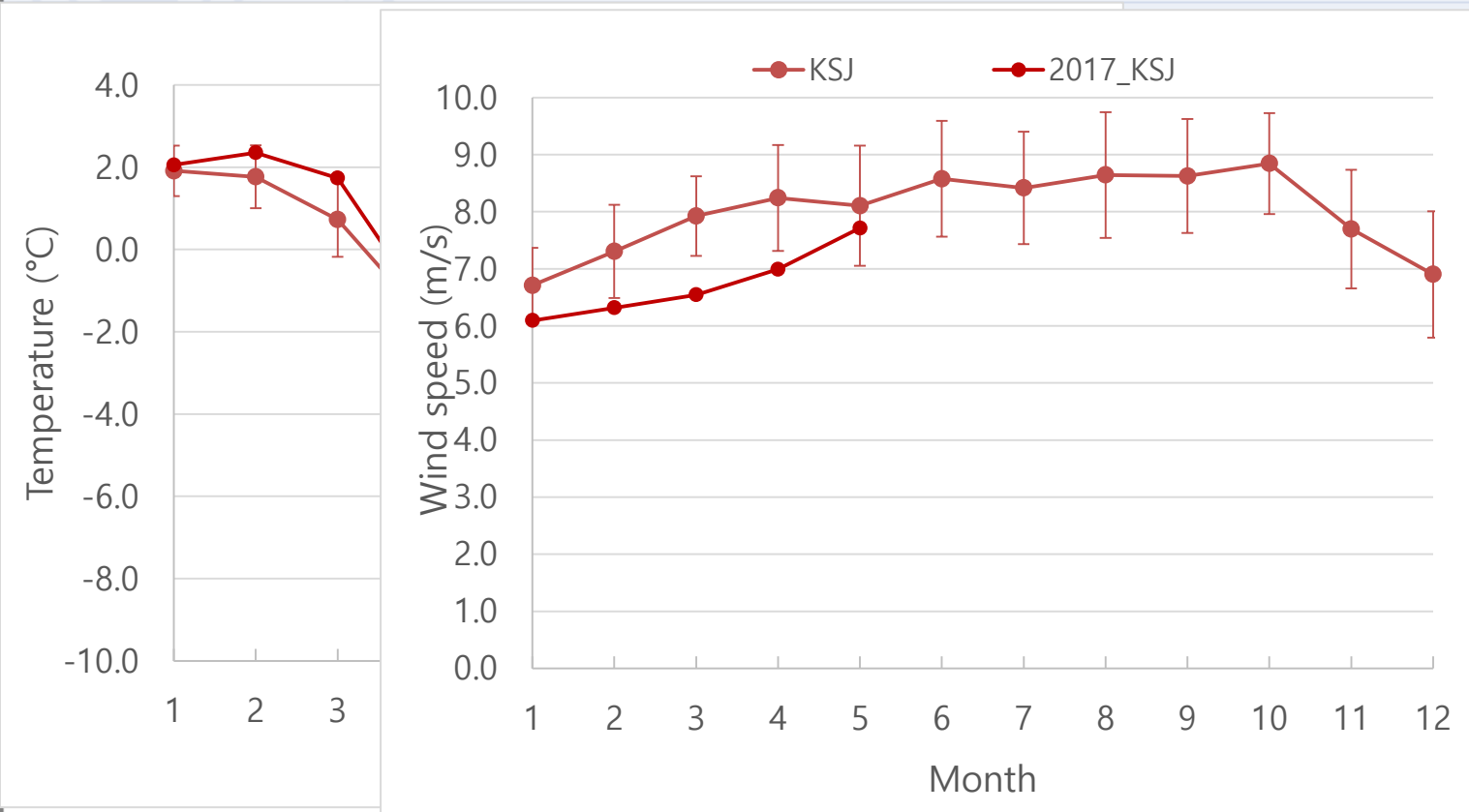
Fig. 3. Seasonal temperature change between 1996 and 2005 and 2006-2015, with the observed impacts on the cryosphere in the AP region.

From Oliva et al. (2016, Sci. of Total Environment)

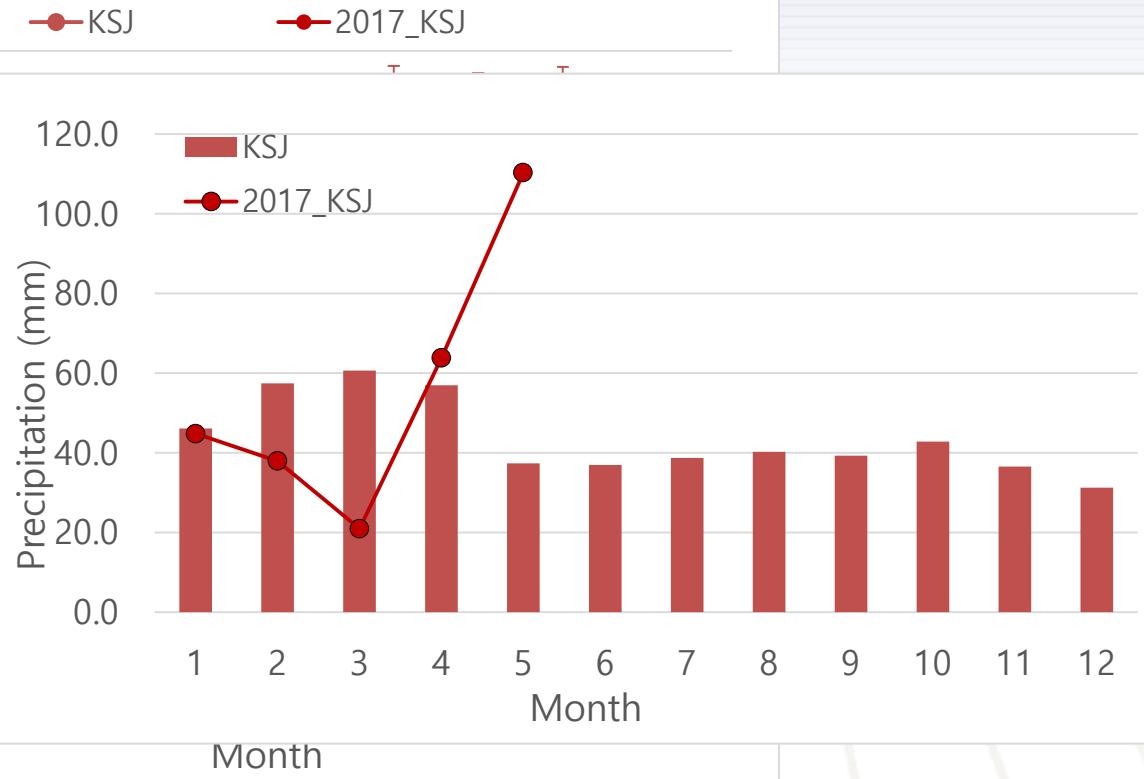
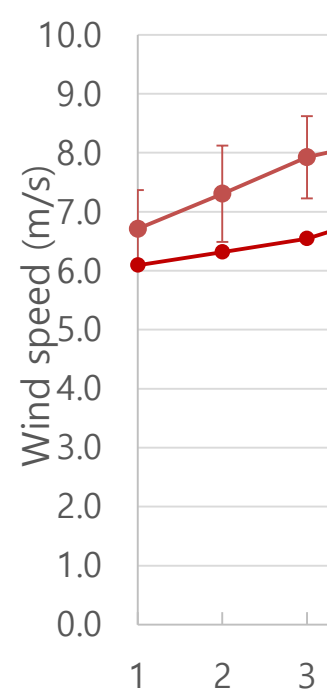
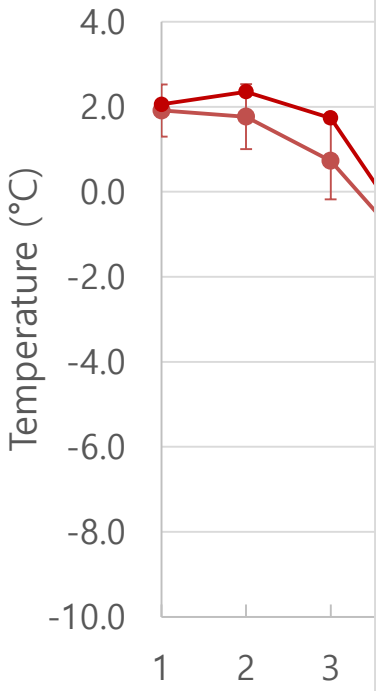
In 2017.



In 2017.



In 2017.



To-do list in 2017

- Consistent 1988-2016 data QC considering maintenance report etc.
- GTS path change: KSJ-Frei-WMO
→ KSJ-KMA-WMO in BUFR (2017)
- Preparation of radiosonde launch for YOPP-SH
- Gap-filling with help of other stations
(i.e. Bellingshausen)
- Dual AWS setup



Thanks for your attention

