Nutrient fields in the Bering Sea: available data and results

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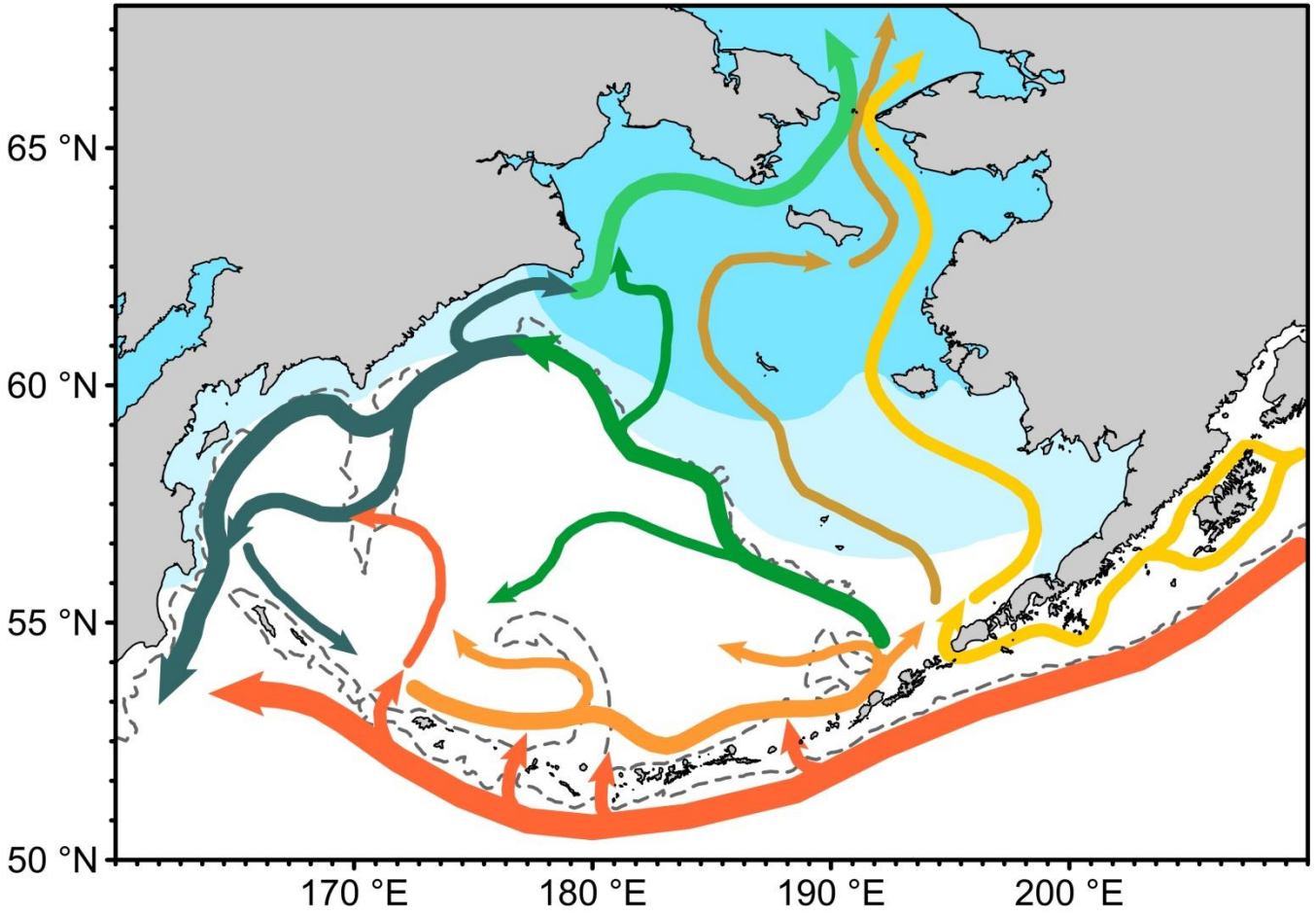
25 YEARS
RFBR

Introduction



(*Danielson et al., 2011; Basyk, 2009; Khen, 2001; Khen et al., 2013; Coachman, 1986; Kinder and Schumacher, 1981; Kinney et al., 2009; Ladd, 2014; Panteleev et al., 2006, 2011; Stabeno et al., 2016; Verkhunov et al., 1995)*

Ice margin (IV and V) and summer currents in the Bering Sea

Data Sources

- WOD’13 (NODC, USA)
- JAMSTEC (R/V Mirai, JPN)
- BEST/BSIERP (USA)

Available on-line

- TINRO-Center (R/V TINRO, R/V Professor Kaganovsky – credits: Dr. Vladimir Matveev, RUS)
- Hokkaido U. (R/V Oshoro Maru – credits: Dr. Toru Hirawake, JPN)

Some data received upon request

- BASIS (credits: Lisa Eisner, USA)

Available upon request

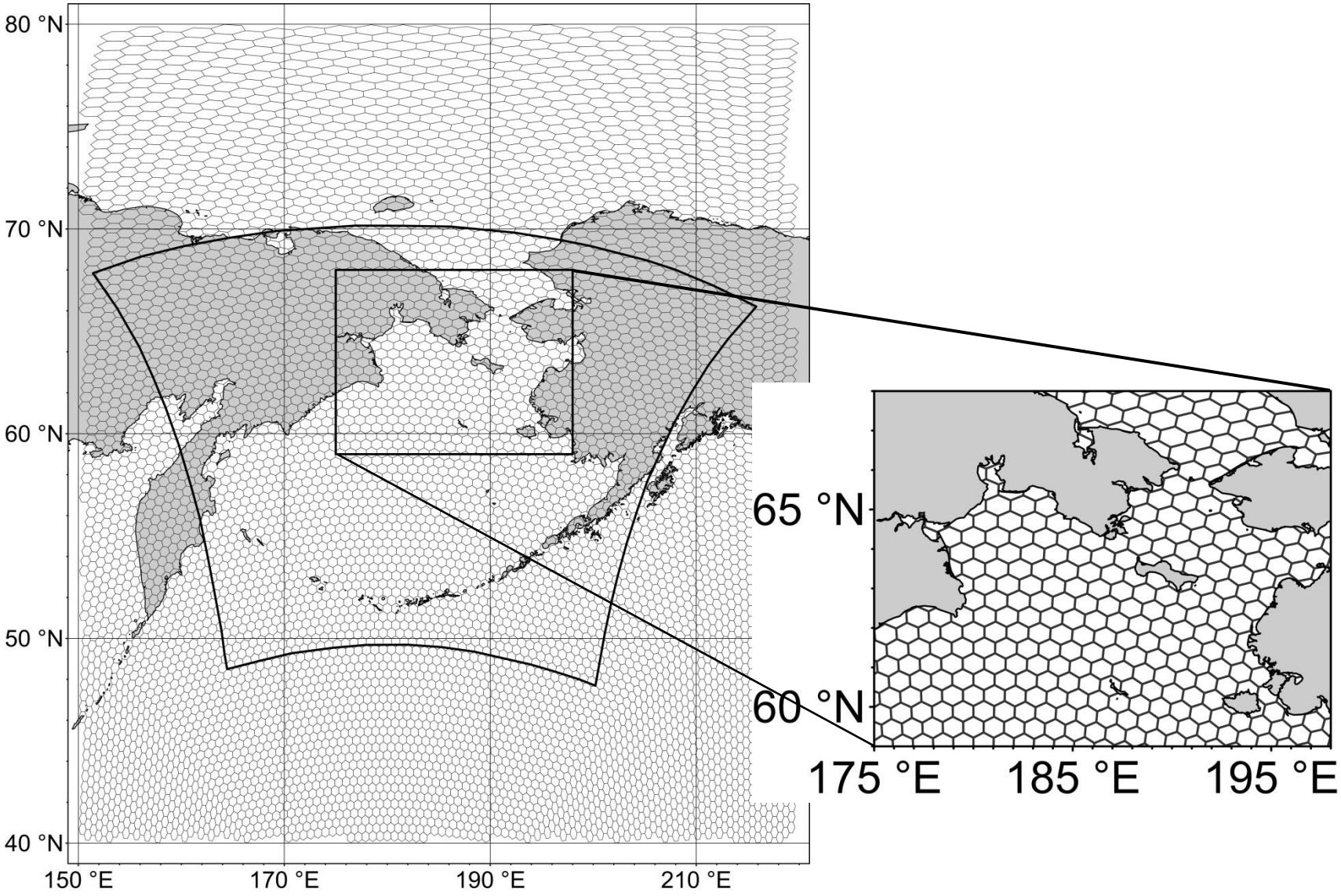
- CHINARE (CHN)

Example of another existing data

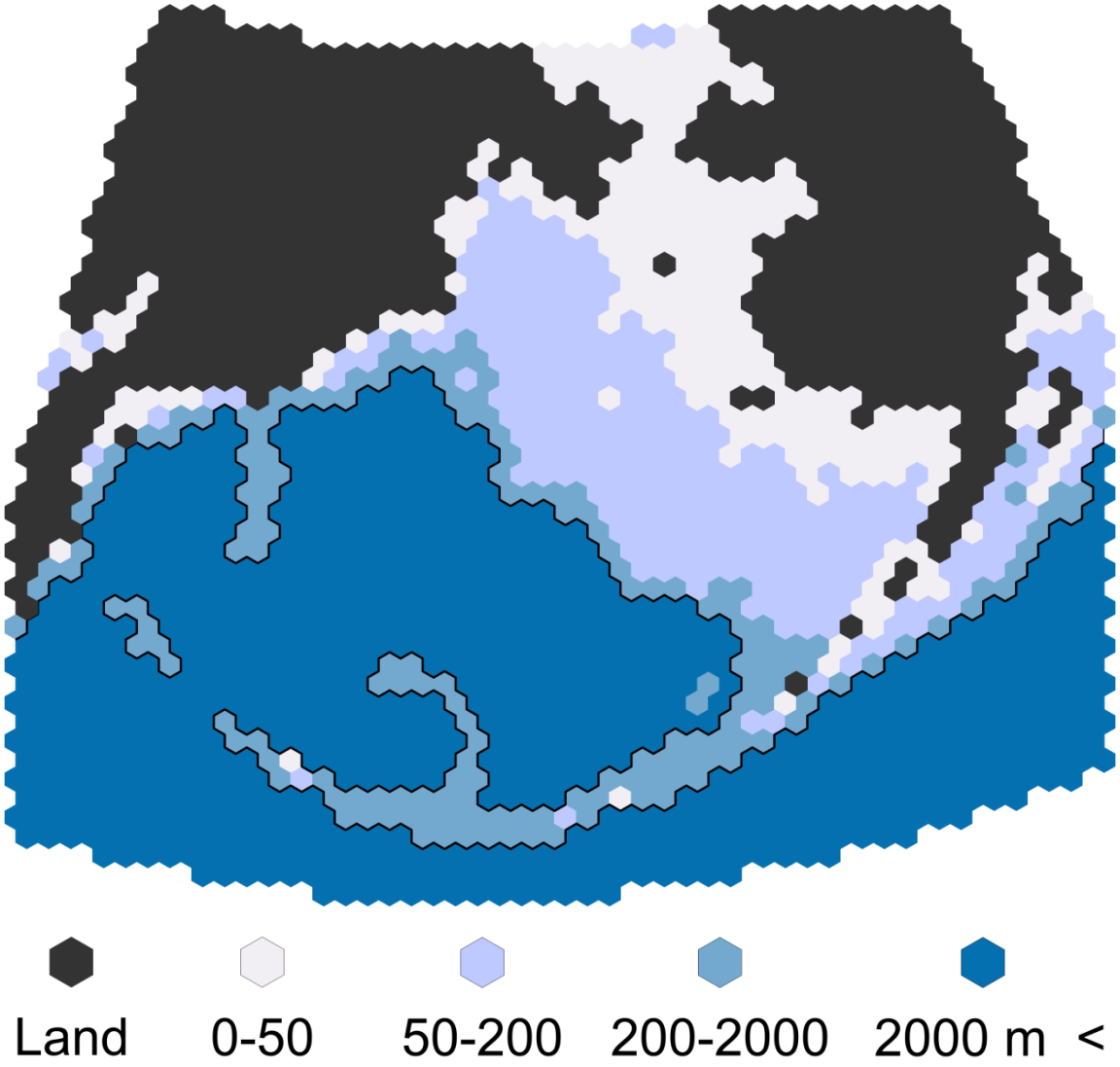
Approach

- Data collection in ODV (Schlitzer, 2016)
- Geodetic discrete grid creation with package dggridR (Barnes et al., 2017) – Icosahedral Snyder Equal Area Aperture 3 Hexagonal Grid
- Spatio-temporal averaging with Gaussian weighting function and truncation radius of 100 km
- Schematic visualization of data
- Examples of synthesized results

Methods: hexagonal geodetic grid

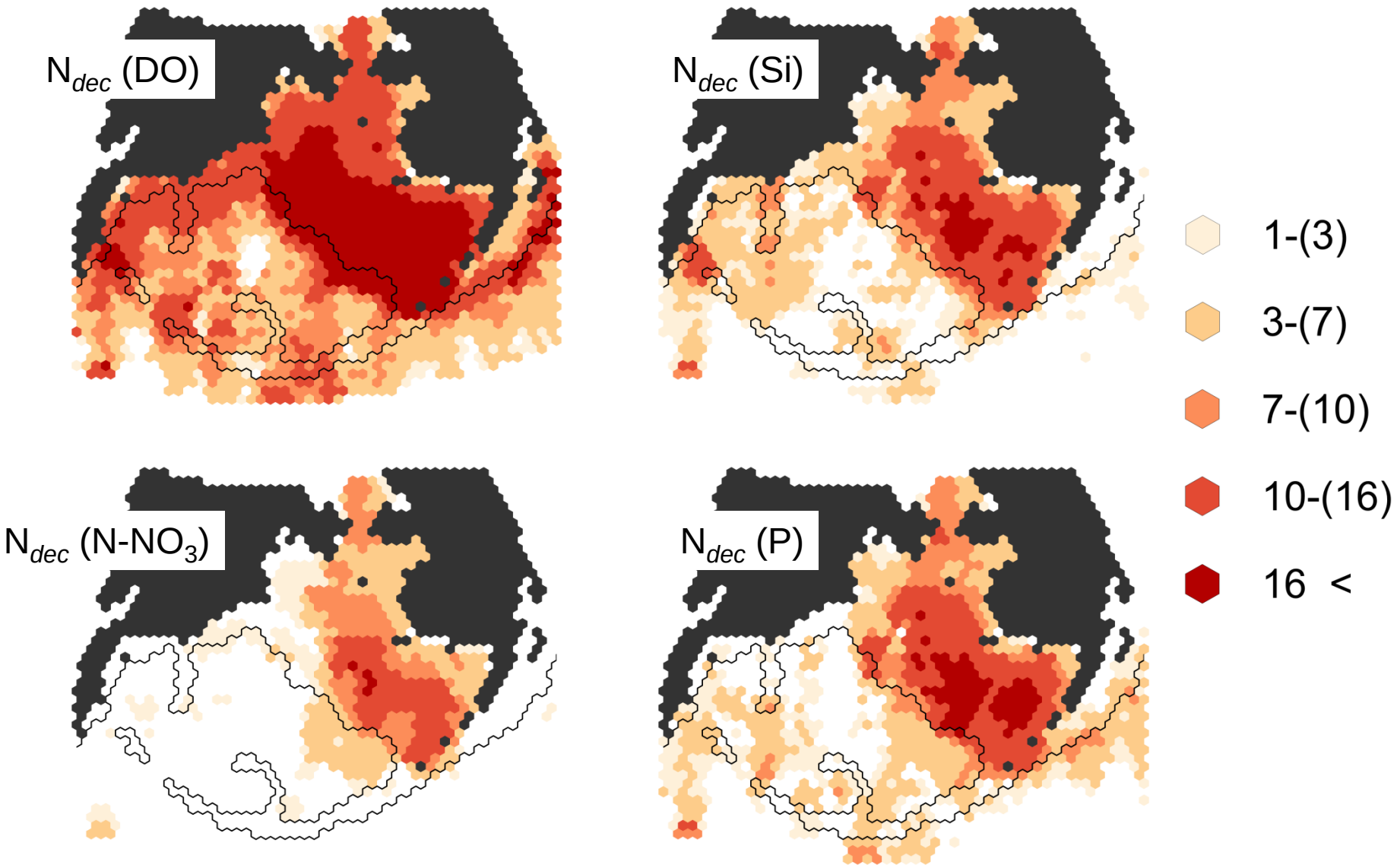


Methods: hexagonal grid scheme



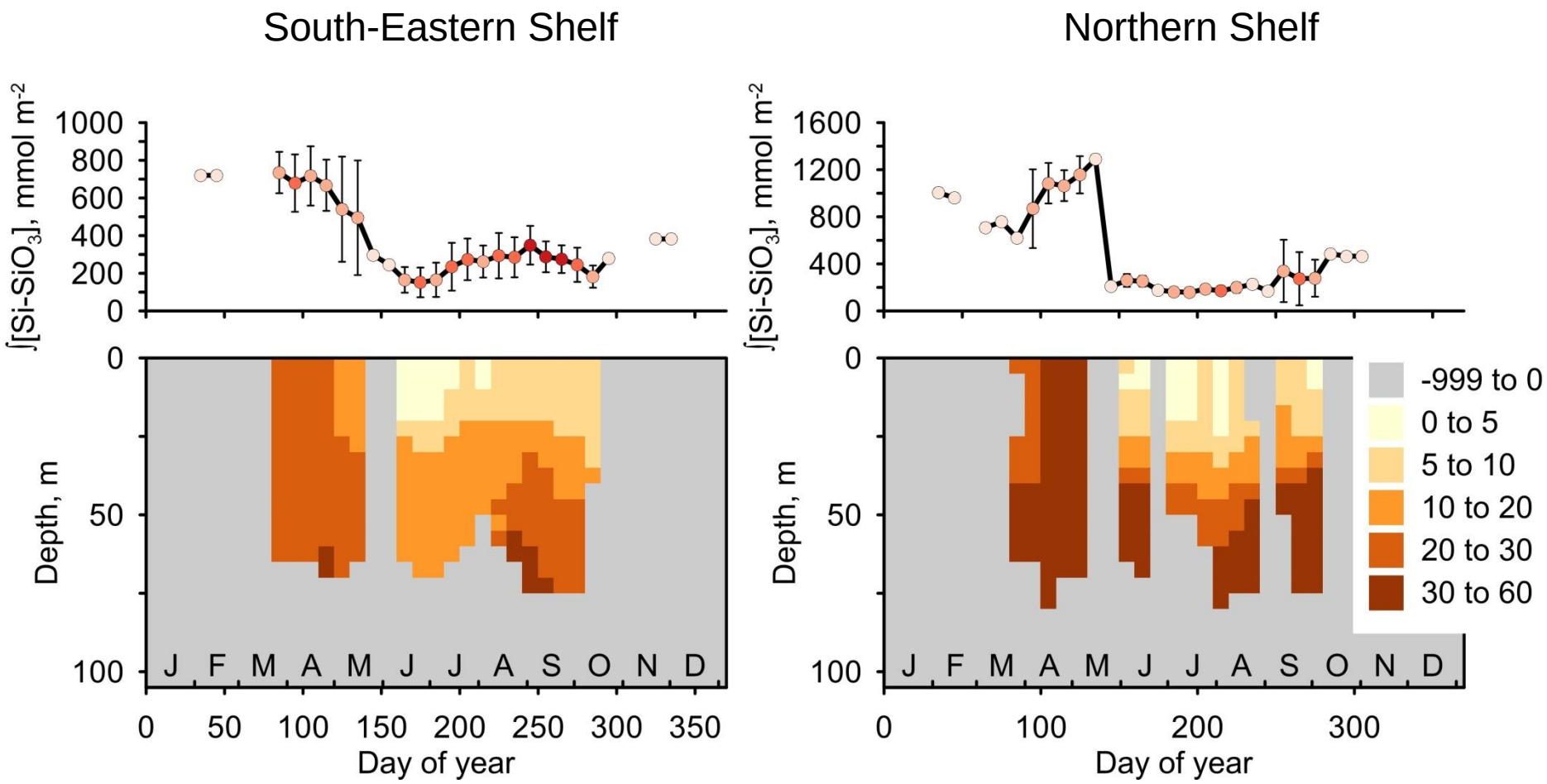
Mean bathymetry in every grid cell based on GEBCO (0,1° resolution)

Data: spatial data distribution



Number of decades with data (decades with ≥3 stations)

Example of results



Multiyear mean seasonal cycle of silicate for two cells

Conclusions

- Synergetic effect of combined data
- Hexagonal grid perform quite well
- Approach for other data analysis

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