Using a generative adversarial network-based model to simulate fishing behavior in Antarctic krill fishery

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CONTENT

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BACKGROUND

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RESULTS

10 %

DISCUSSION

BACKGROUND

Source: chen zhuang

Krill fishery is a crucial southern ocean fishery, maintaining a balance between the human and the ecosystem.

Hotspot of krill fishery is krill fishing behavior, which resembles animal foraging behavior.

BACKGROUND

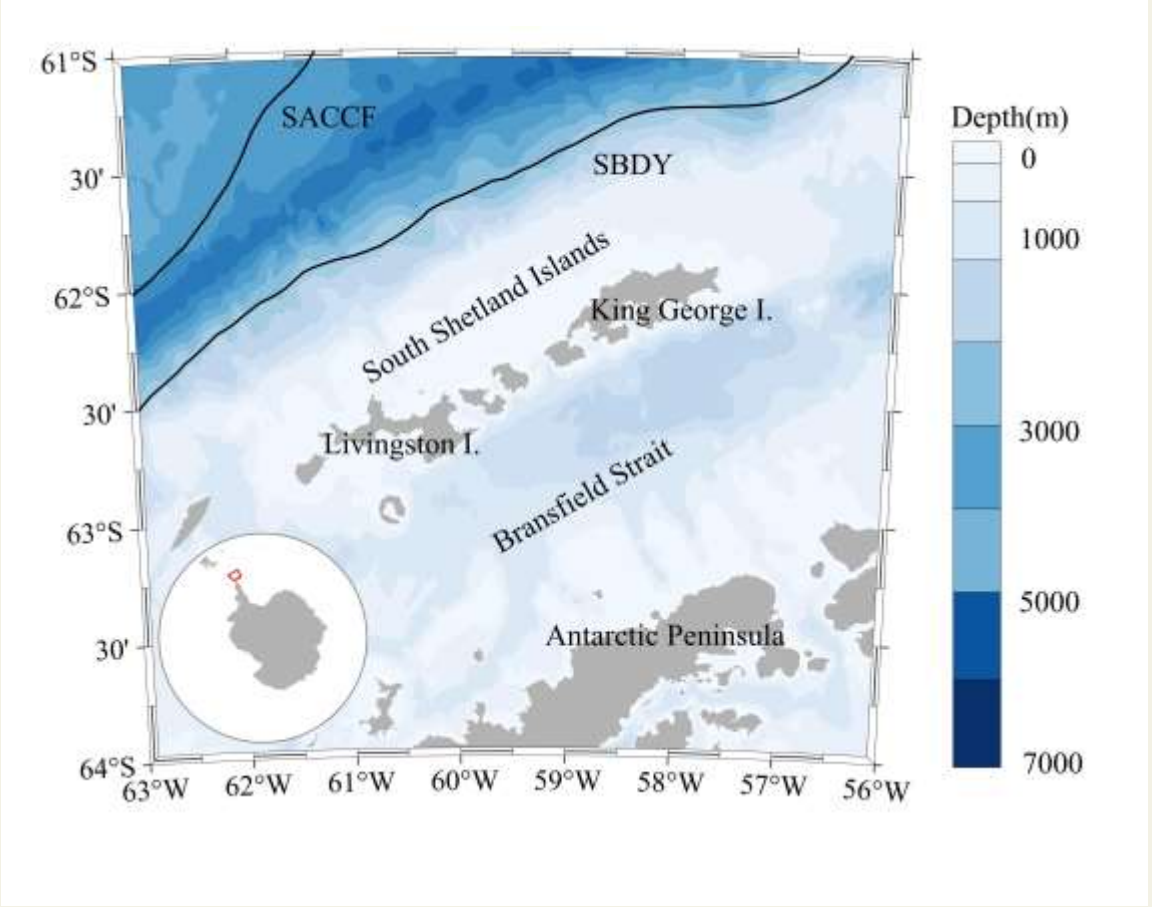
Modelling play a key role in behavior research, and our research contributes to fishing behavior using DEEP LEARNING.

- Levy flight
- Temporal feature
- Inspired by Roy

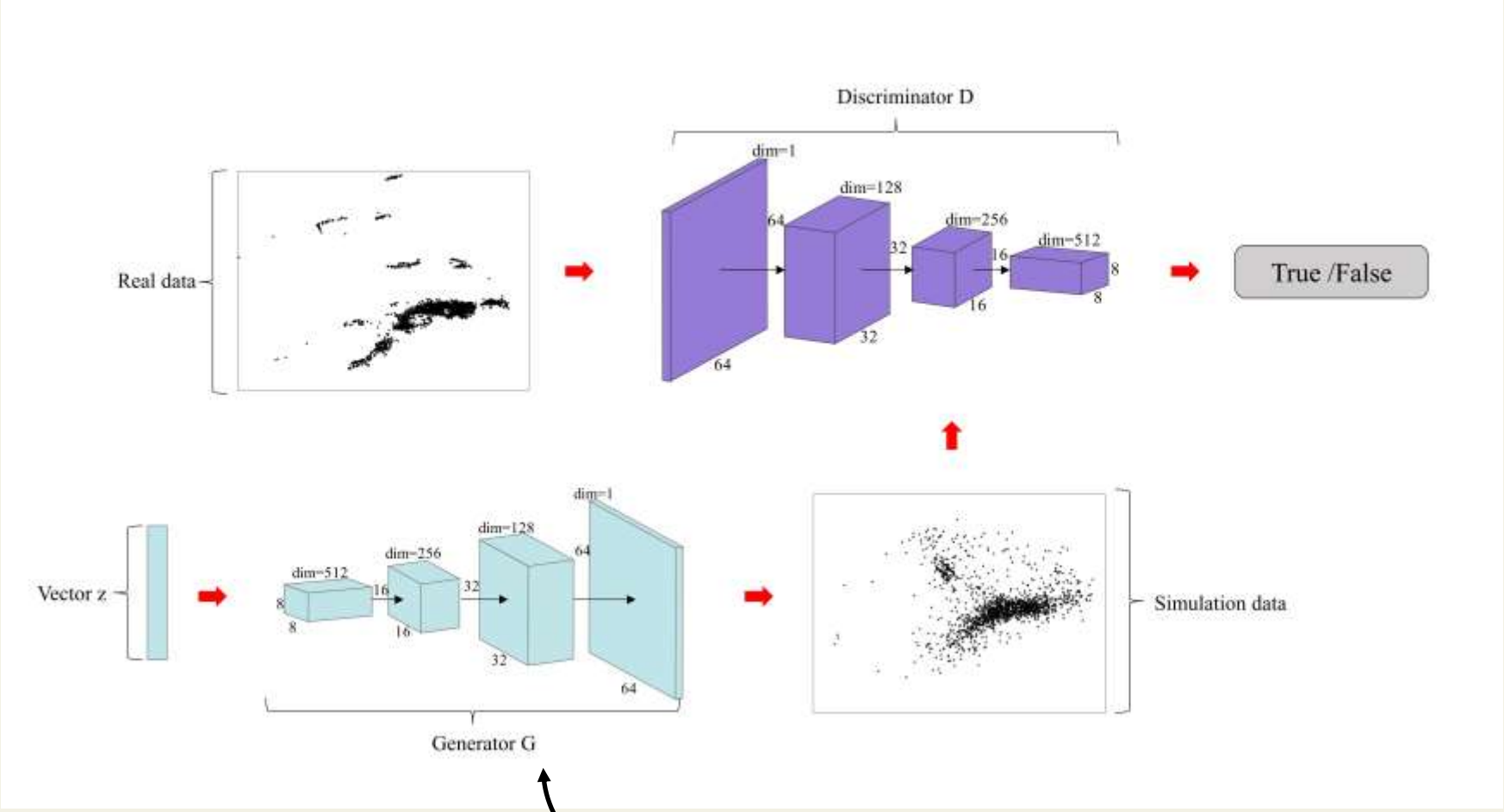
STUDY AREA

The Chinese fishery vessels operate in the subarea 48.1, and contributes to ecosystem research by recording valuable data.

- Influenced by the fronts
- Main fishery grounds
- Fishing behavior is changing

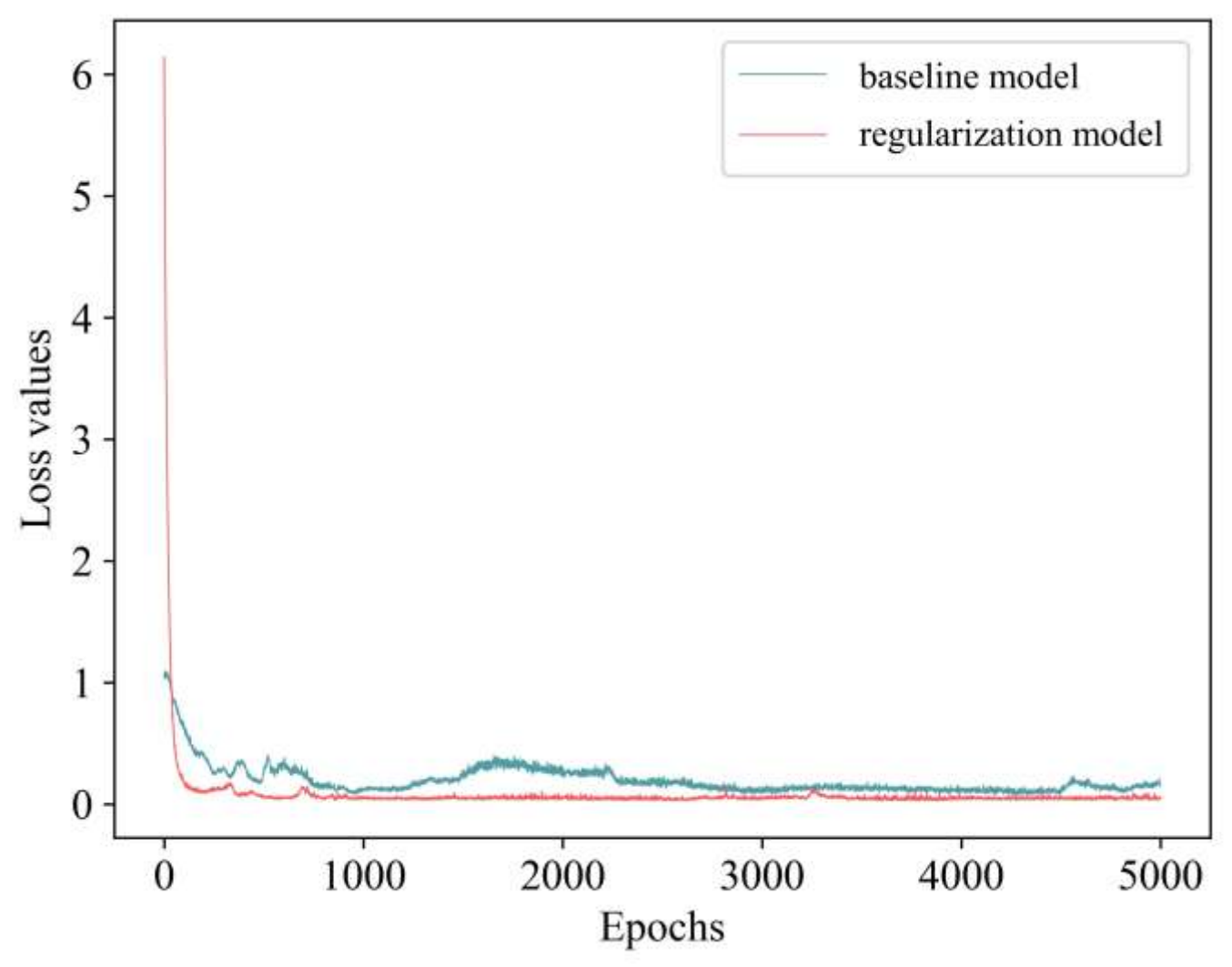


WORKFLOW

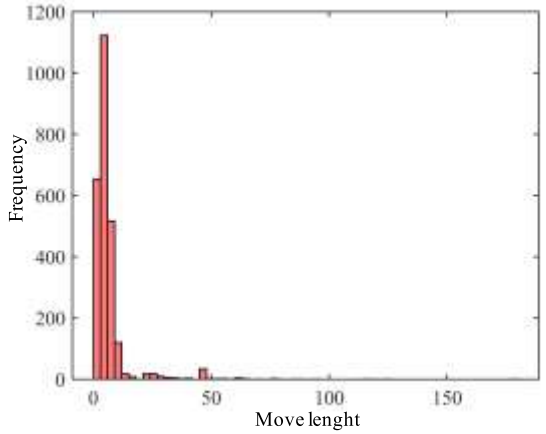


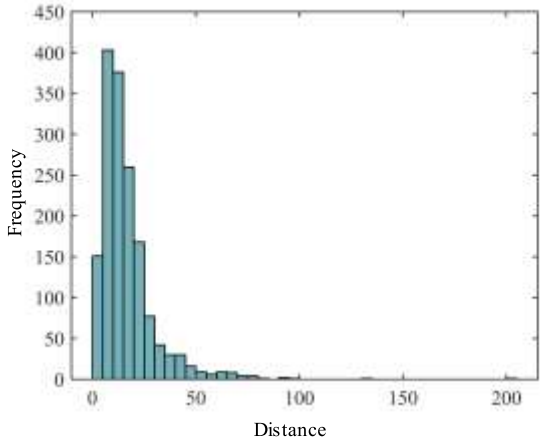
SPECTRUMREGULARIZATION

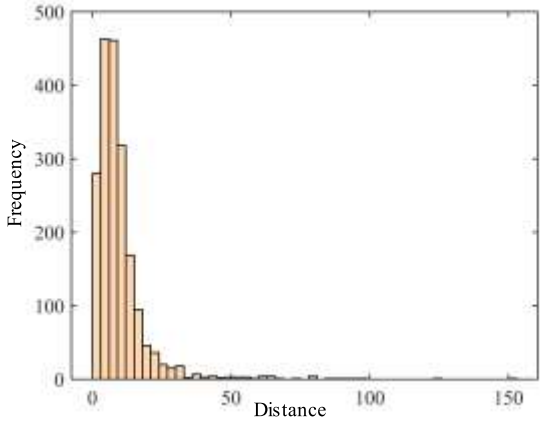
LOSS VALUE

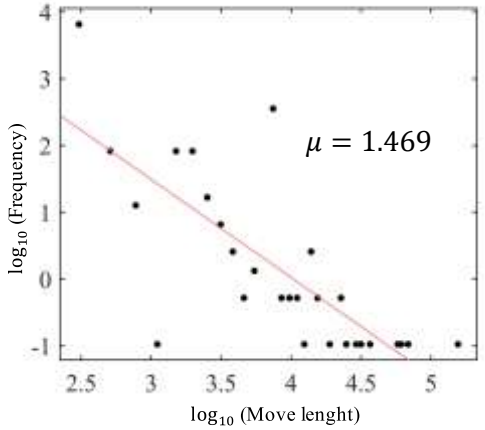

baseline model
regularization model
Loss values
Epochs
0
1
2
3
4
5
6
0
1000
2000
3000
4000
5000

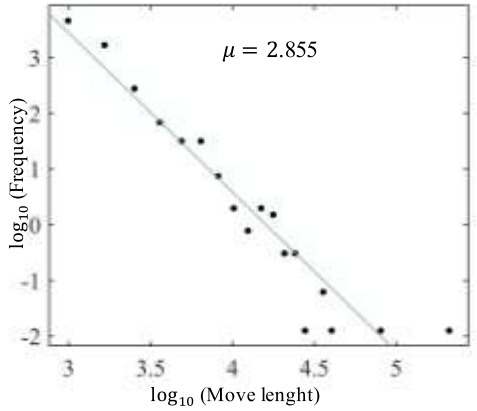
LEVY FLIGHT

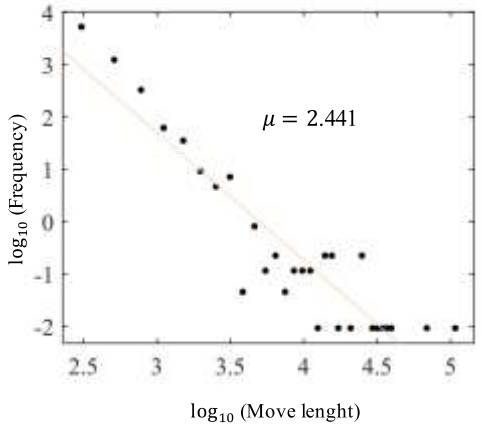

Frequency
Move lenght


Frequency
Distance

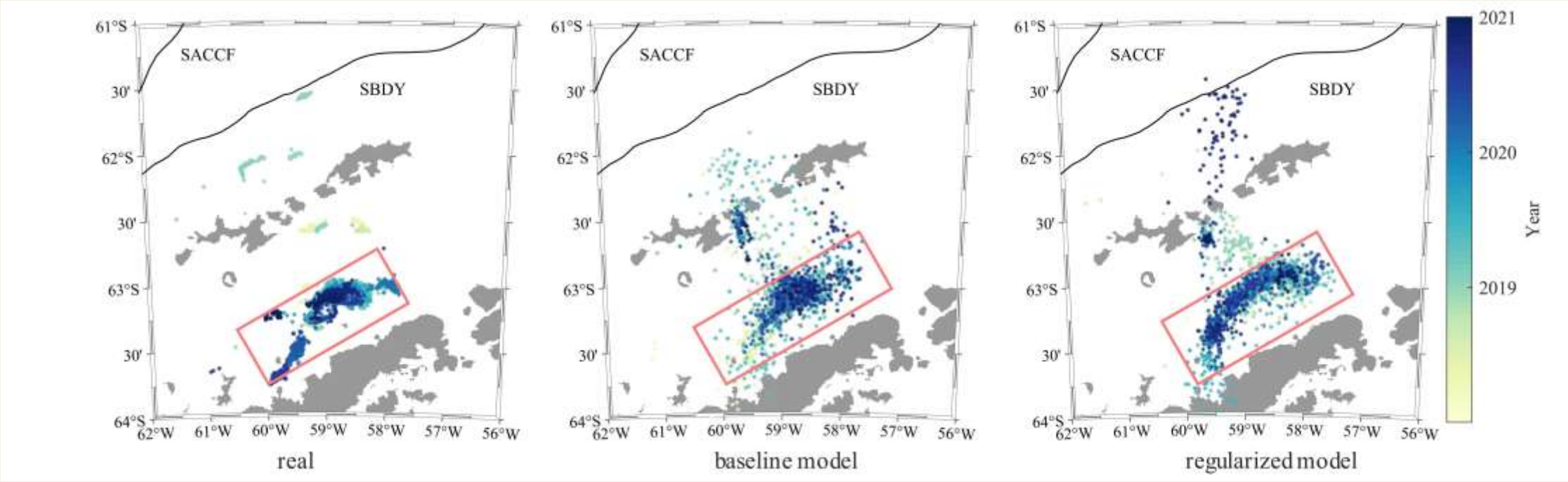

Frequency
Distance


$\mu = 1.469$
log10 (Frequency)
log10 (Move lenght)


$\mu = 2.855$
log10 (Frequency)
log10 (Move lenght)


$\mu = 2.441$
log10 (Frequency)
log10 (Move lenght)

VISUAL INSPECTION



DISSCUSSION

EMBEDDING

Acting as a compent of the risk assessment framework.

TESTING

This offers a flexible fishery distribution for testing of the resilience of fishery management policies.

CALIBRATING

The discriminator could potentially take on a role analogous to the calibration of observational data.

DISSCUSSION

THANKS

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