

$A \setminus U \setminus 6cf]gcj^{1,2}$   
 $A \setminus U \setminus ? f]b]hg_]m^{1,2}$   
*Richard Thomson<sup>3</sup>,*  
*Alexander Rabinovich<sup>2</sup>*

<sup>1</sup> $A \setminus cgWck \setminus bgh]hi \setminus hY \setminus cZD \setminus mg]Wg \setminus UbX \setminus HYW \setminus bc \setminus c \setminus [ \setminus m$

<sup>2</sup> $G \setminus ]fg \setminus cj \setminus bgh]hi \setminus hY \setminus cZC \setminus WUbc \setminus c \setminus [ \setminus m \setminus z \setminus Fi \setminus gg]Ub \setminus 5 \setminus WJXYa \setminus mcZ \setminus GW]Yb \setminus W]g$

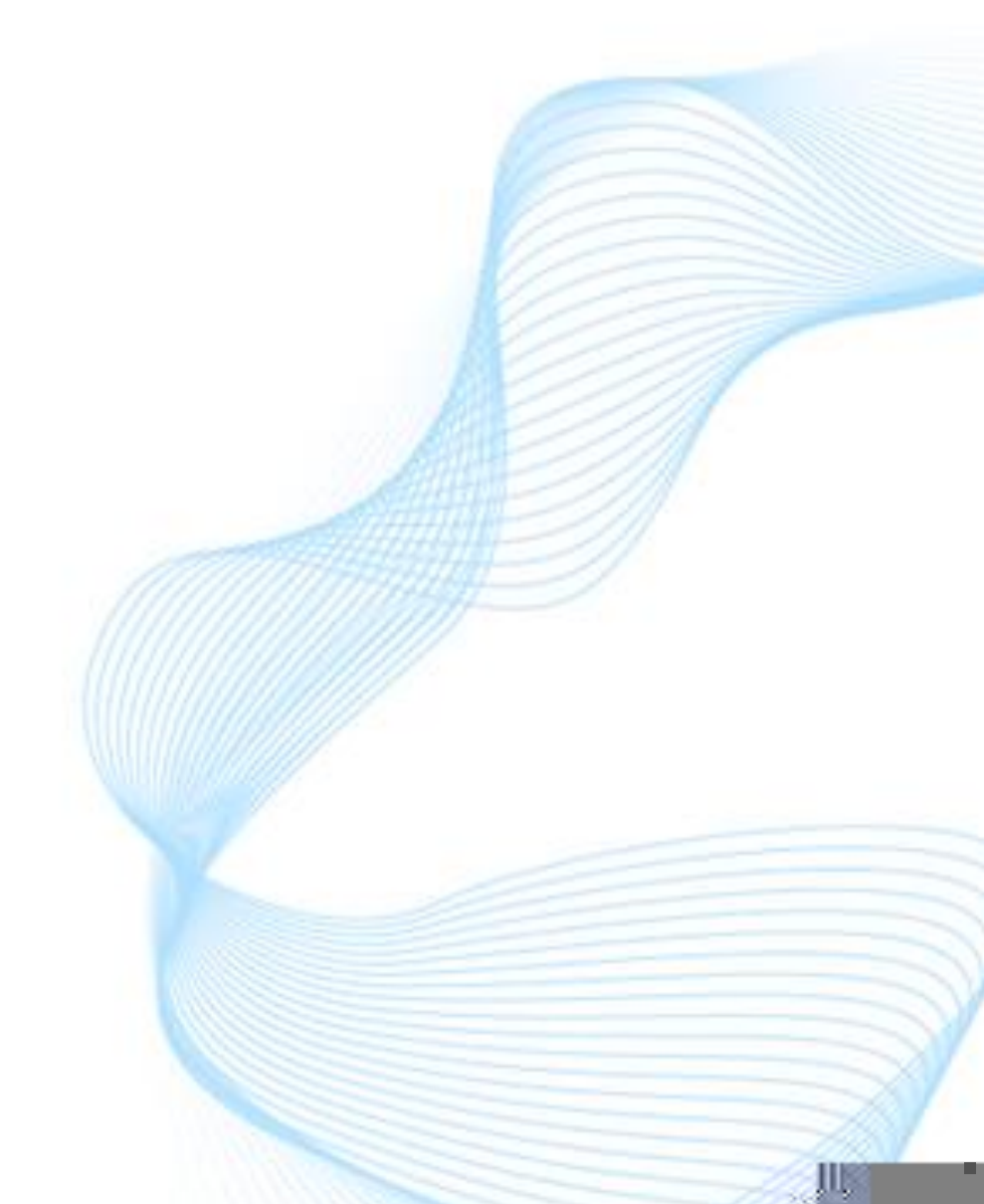
<sup>3</sup> $\setminus bgh]hi \setminus hY \setminus cZC \setminus WUb \setminus GW]Yb \setminus W]g$



# Oncorhynchus nerka

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OCEAN

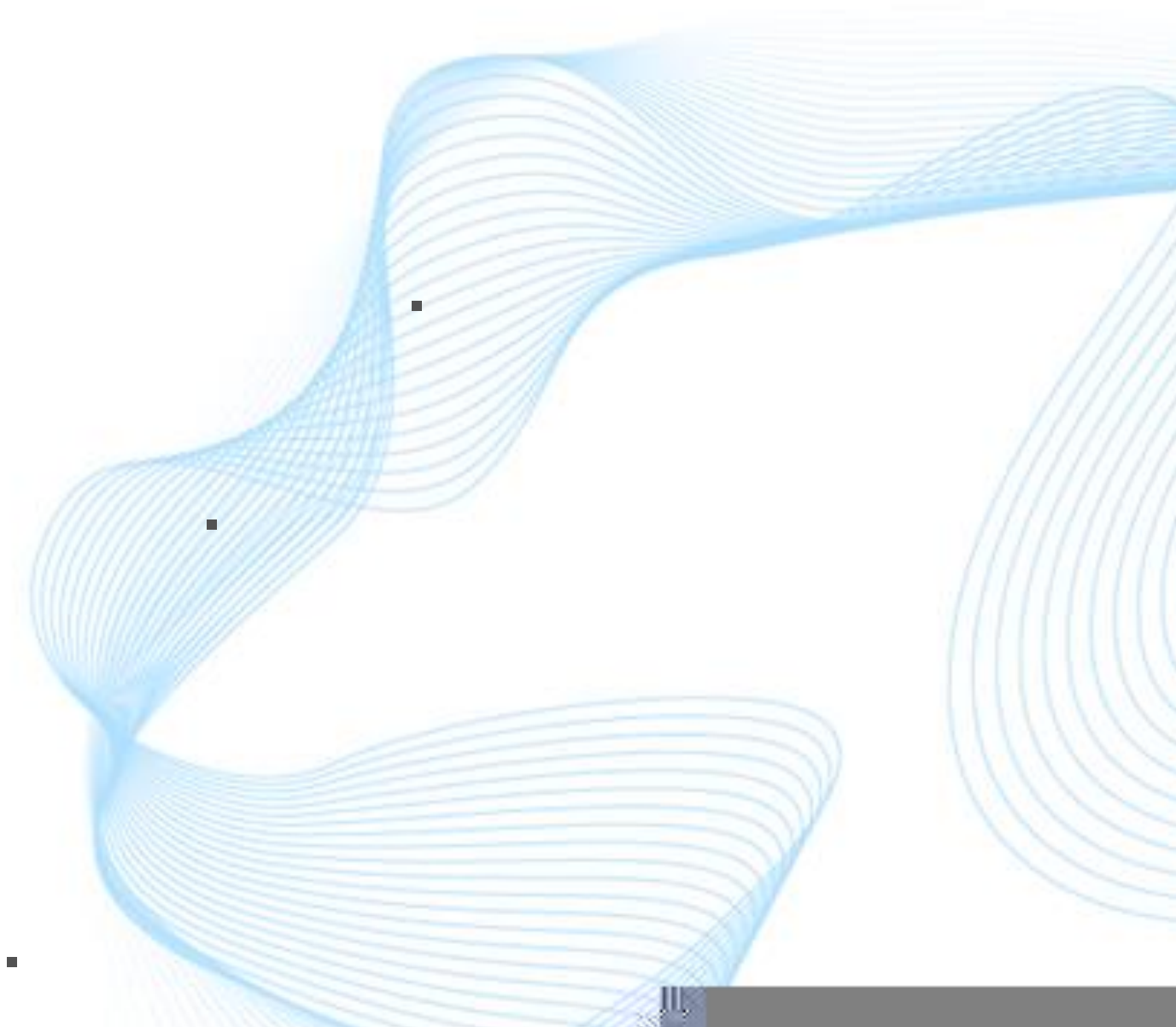




(Oncorhynchus nerka)

1.

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2.

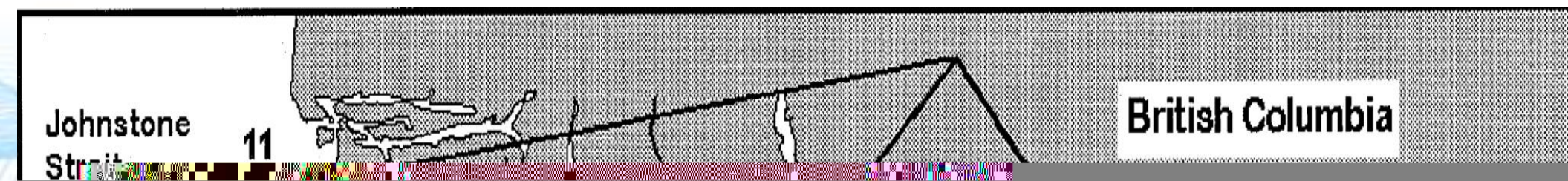
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Chilko

2.

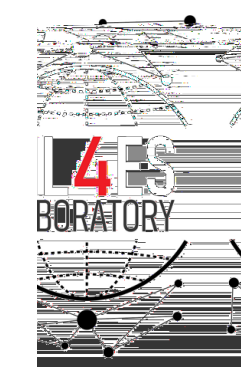
Early Stuart

3.

$$RT_{cos} = \cos\left(\frac{\pi * \text{порядковый день}}{\text{дней в году}}\right)$$

$$RT_{cos} = \frac{RT_{cos} - \text{mean}(RT_{cos})}{\sigma(RT_{cos})}$$

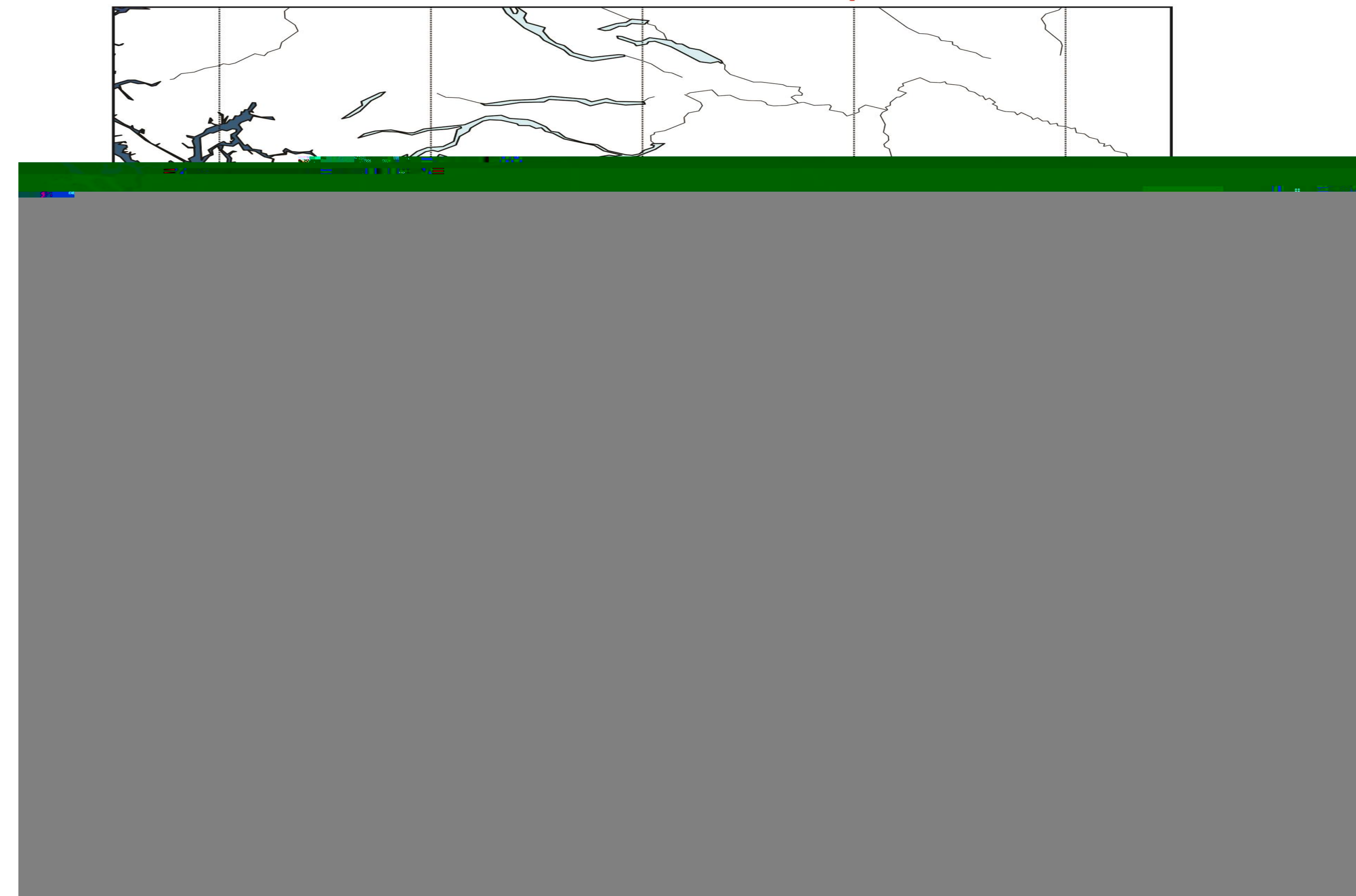
$$NDR_{std} = \frac{NDR - \text{mean}(NDR)}{\sigma(NDR)}$$



# Glorys2v4

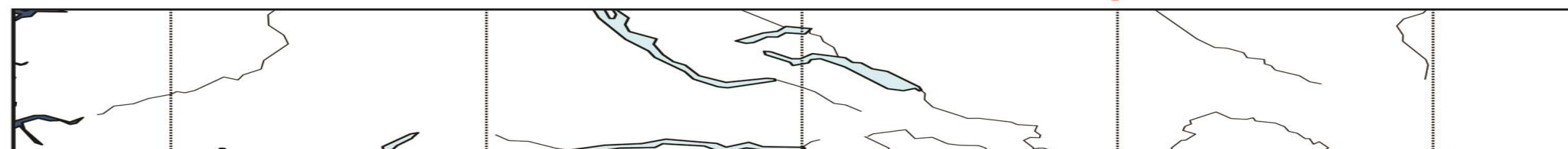
Mean sea surface temperature

1992-2016





### Mean sea surface temperature

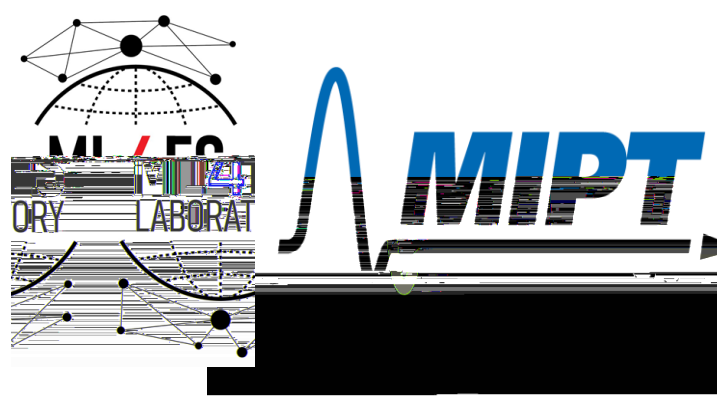


7

168

10000

$\mu = 0, \sigma = 0.001$



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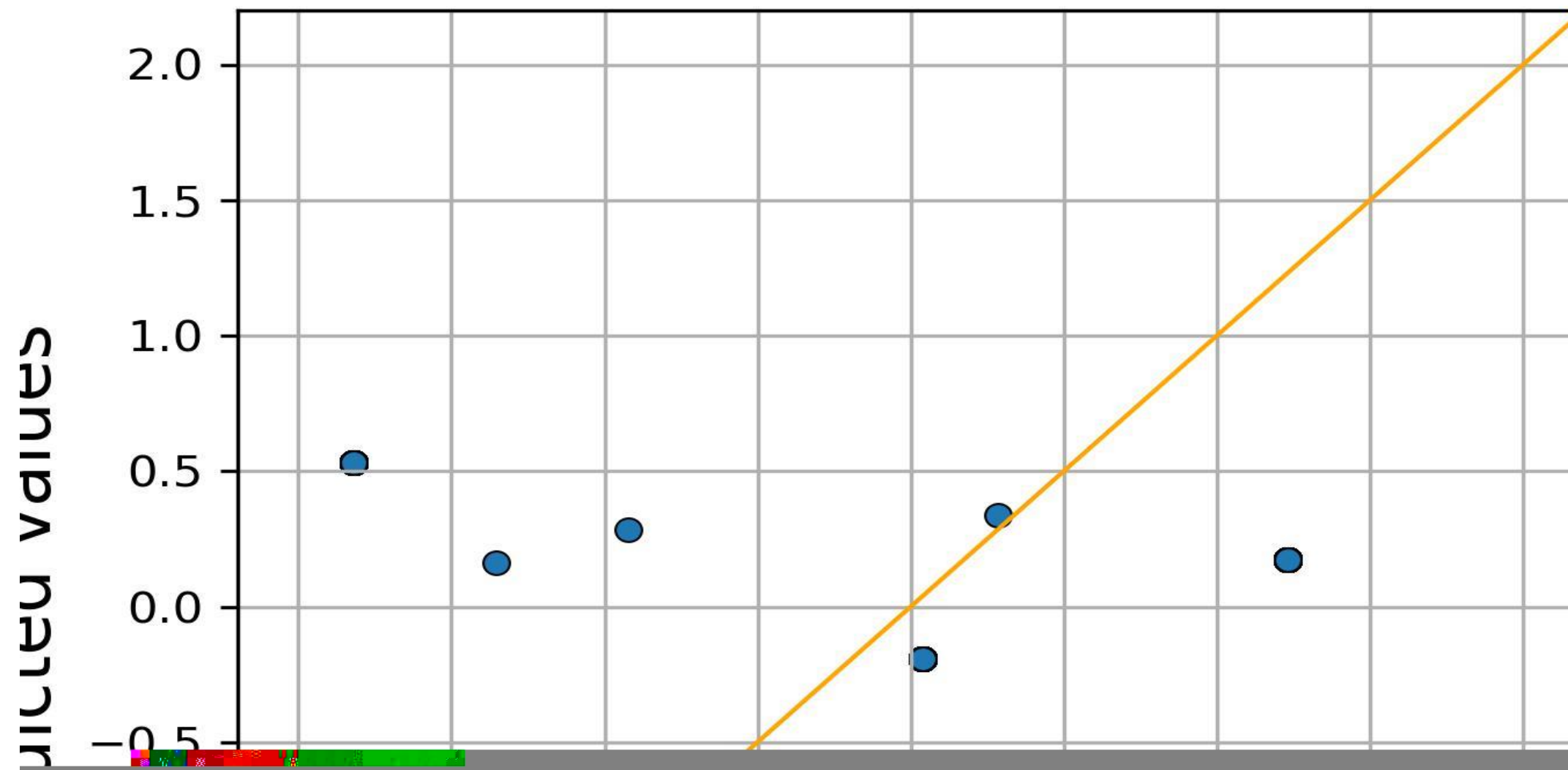
Optuna



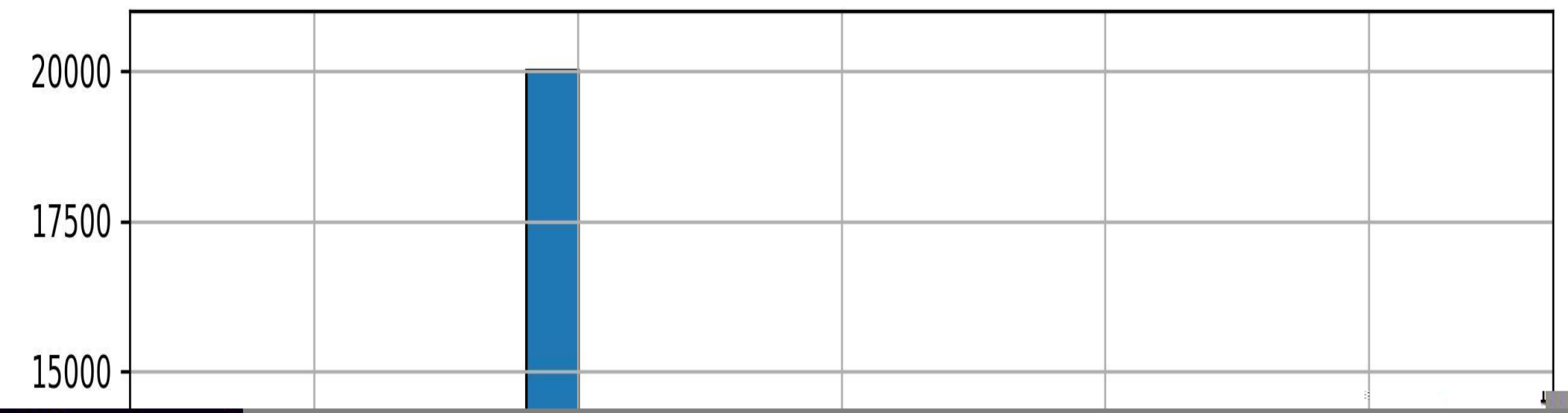


# Chilko

*Chilko*

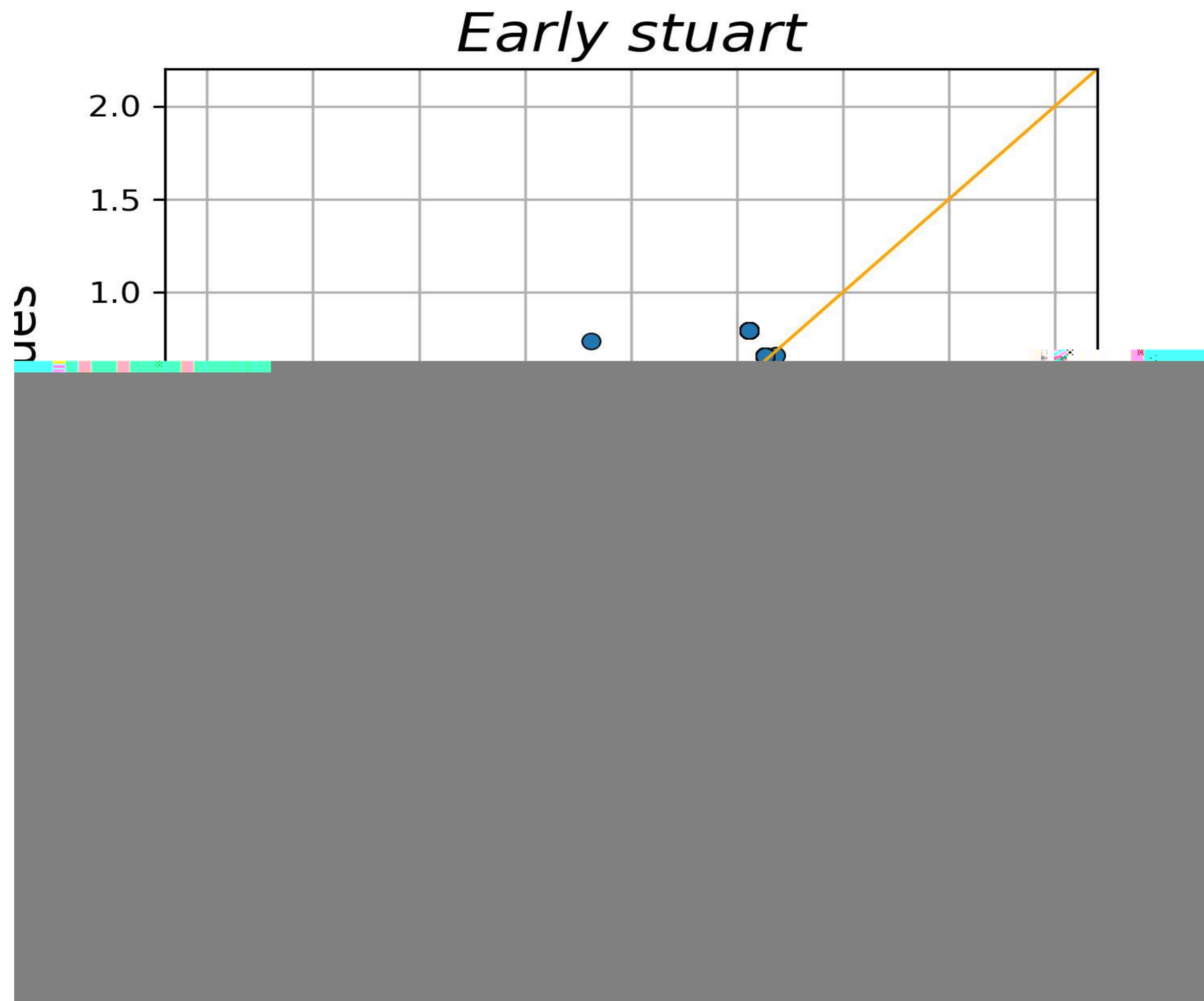


*Chilko*





# Early Stuart

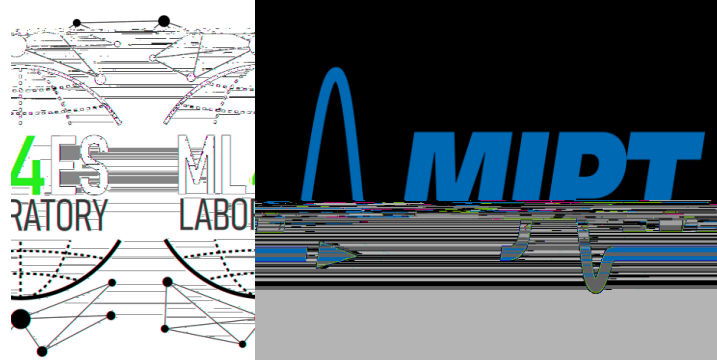




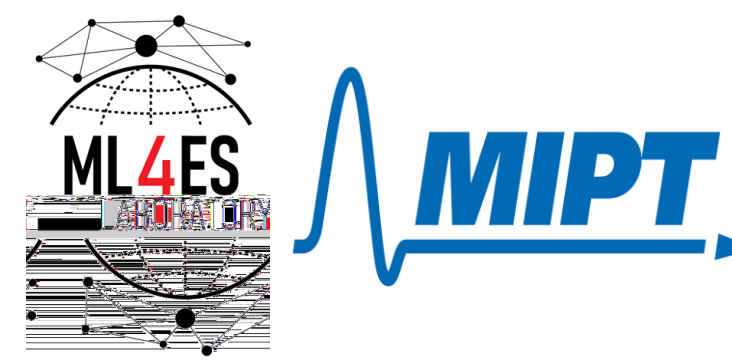
# NDR

NDR





Glorys2v4



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ERA-5, NARR, CMCC

CHOR

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Momentum Contrast

ConvLSTM