

# JASMIN Object Store

*Amulya Chevuturi*

*Matt Brown*

*Matt Fry*

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# Objective & Motivation

Storing and accessing big data is a major concern with large amounts of climate data being produced

One of the newest solutions we are exploring is the *JASMIN Object Store*

**Aim: To evaluate and demonstrate the potential of object storage in effectively handling big data.**

## Object Store

JASMIN Services / Object Store

My Services

Discover services

Login Services

Sci Analysis VMs

Group Workspaces

Project VMs

Cloud Tenancies

Additional Services

Object Store

Search Object Store

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bas-data-o

Object store tenancy for BAS.

More information

cci-ke-o

Object store tenancy for the CCI KE project.

More information

cedadev-o

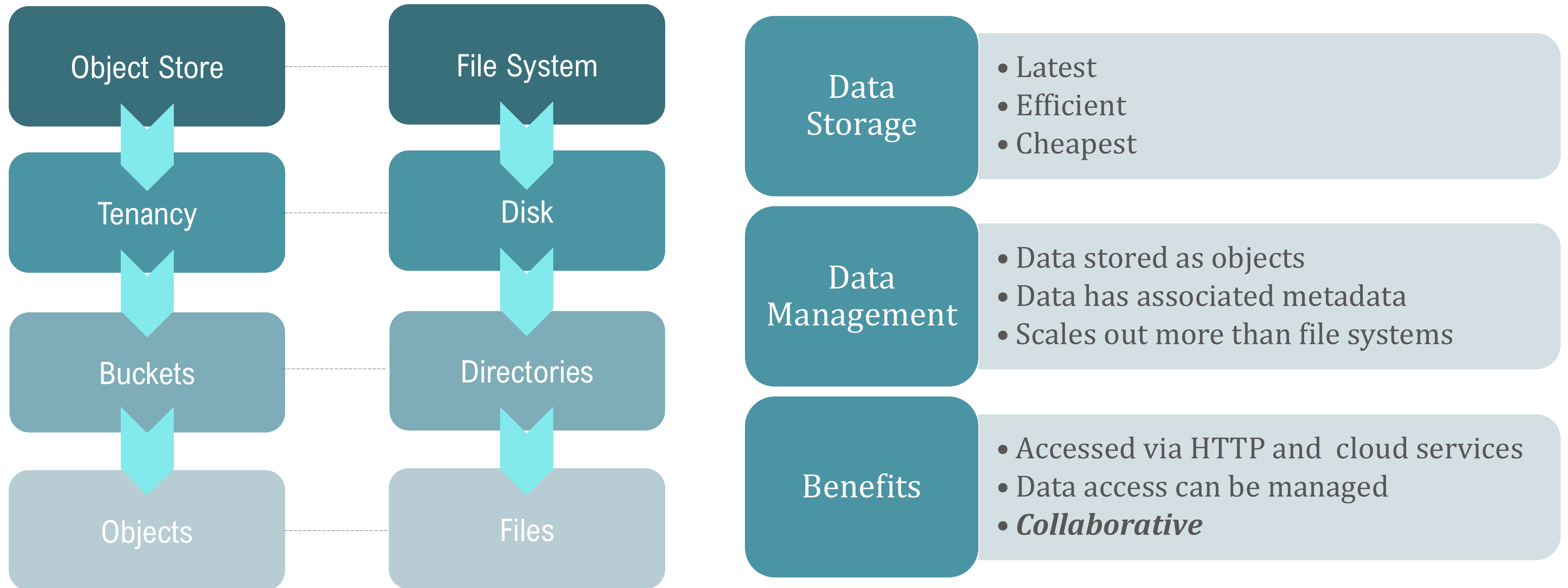
✓ USER

S3 object store tenancy for CEDA testing.

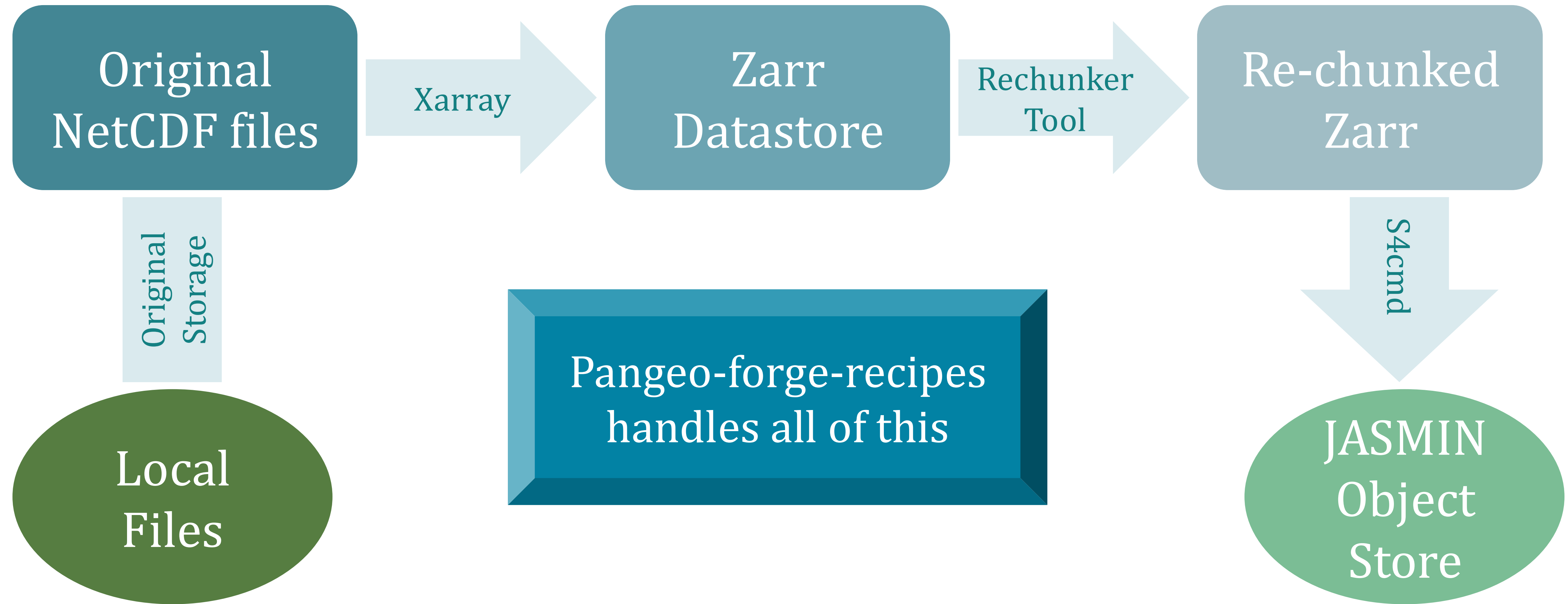
More information

JASMIN Object Store

# Object Store

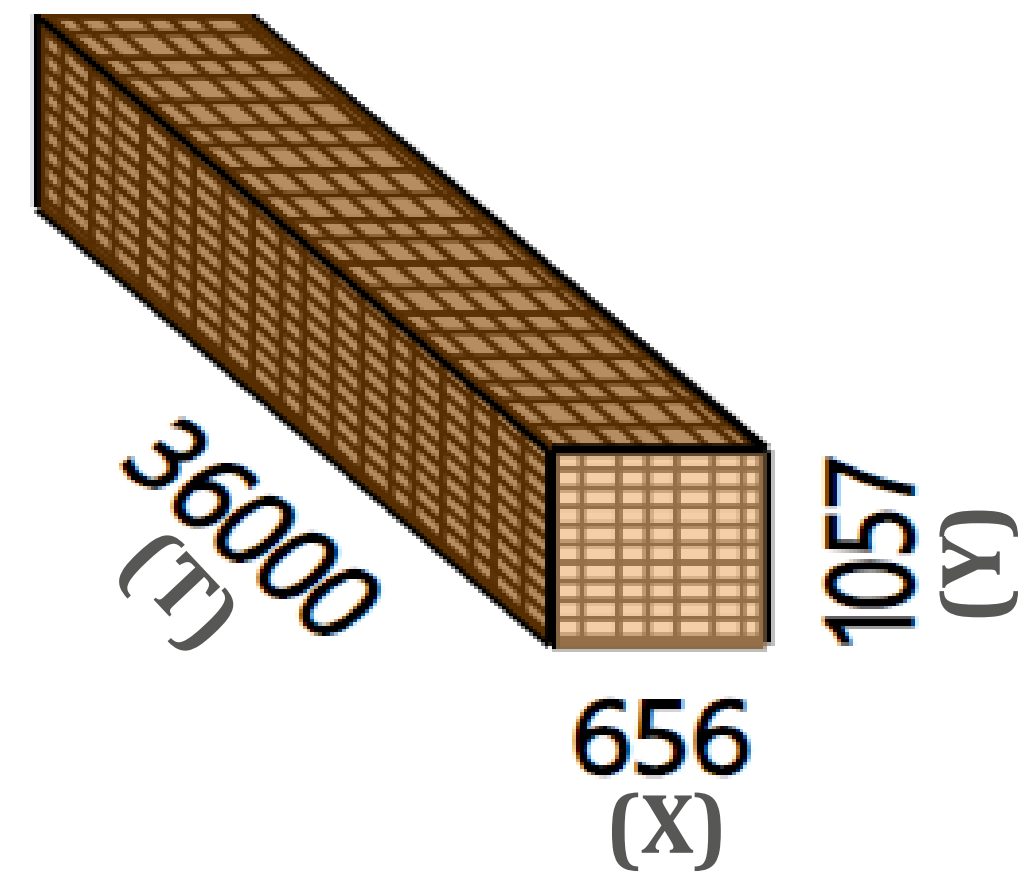


# Data Upload to Object Store



# Data Chunking

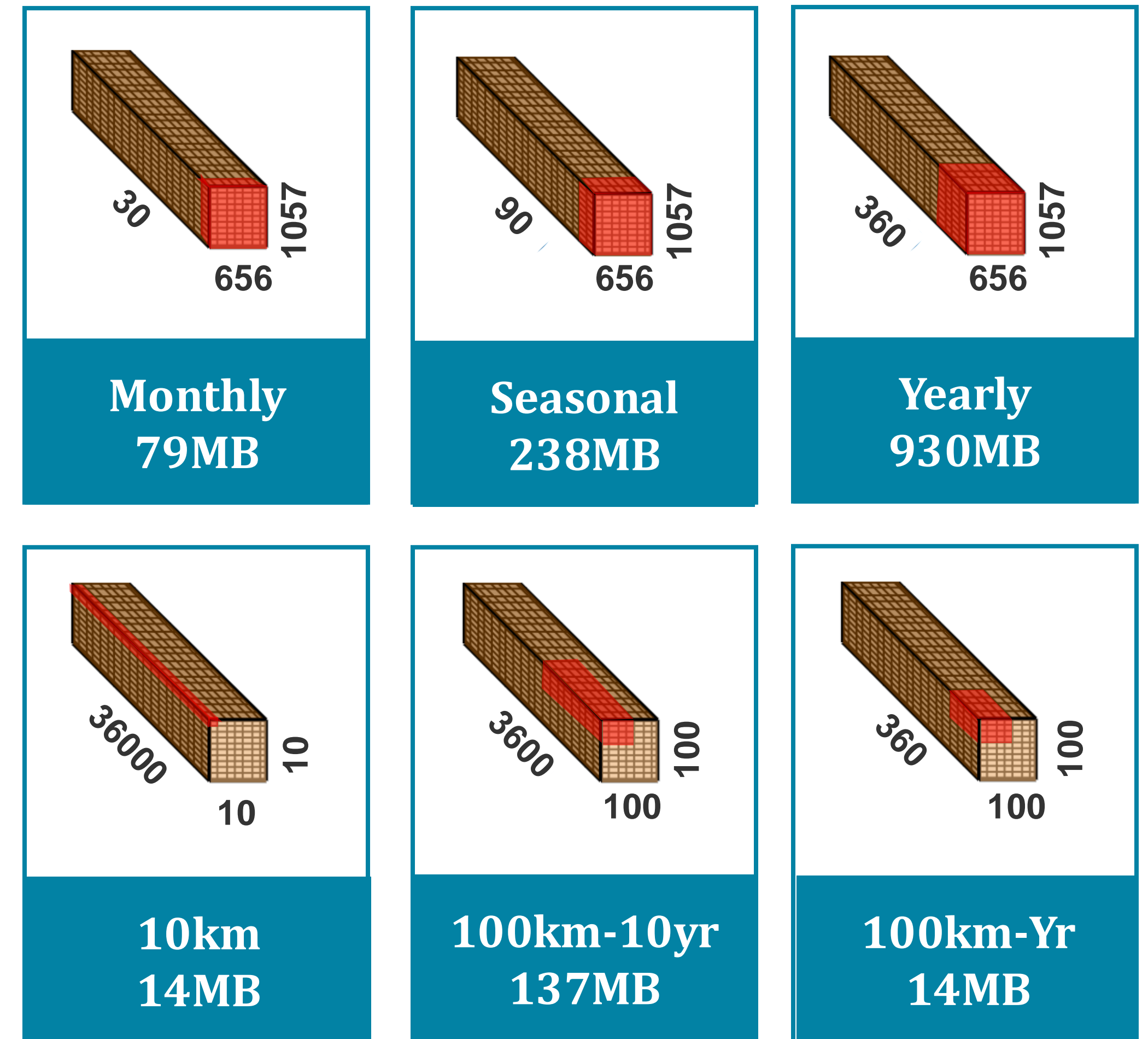
UKCP18 1km RCP8.5  
CHESS-SCAPE dataset (93GB)



$100 \times 360 \times 656 \times 1057$   
1981-2080 (100 years) daily (360-  
day calendar) 1km resolution  
(693392 grid points )

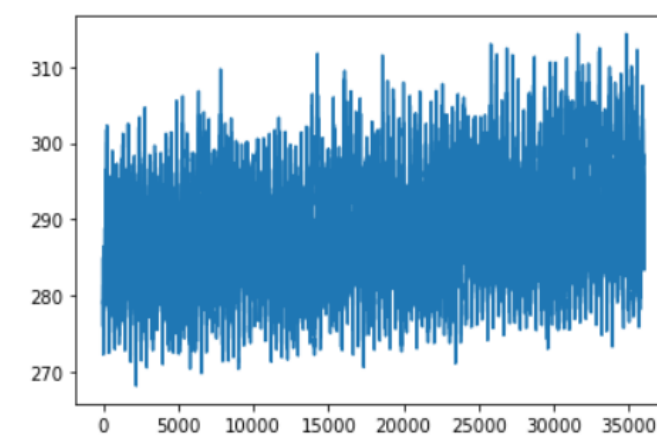
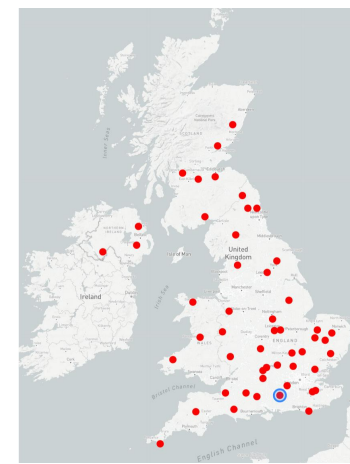
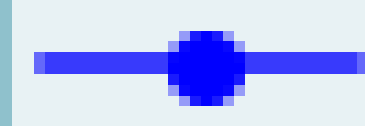


## Different chunk types and sizes

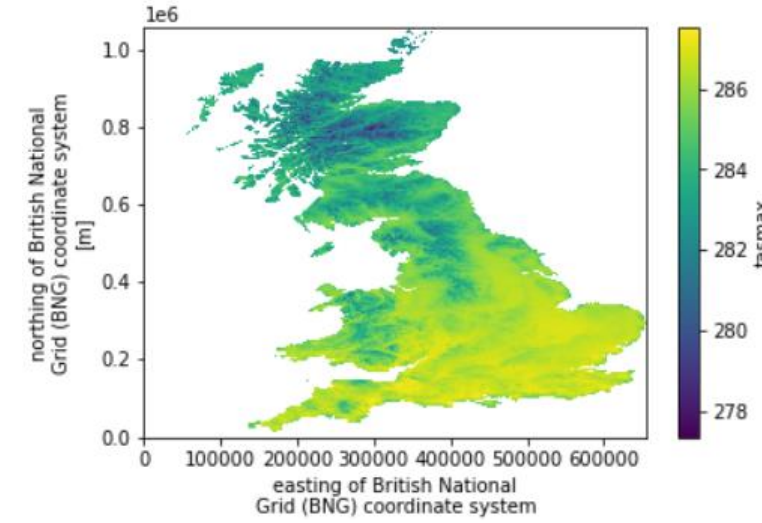
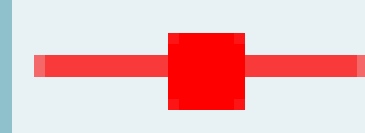




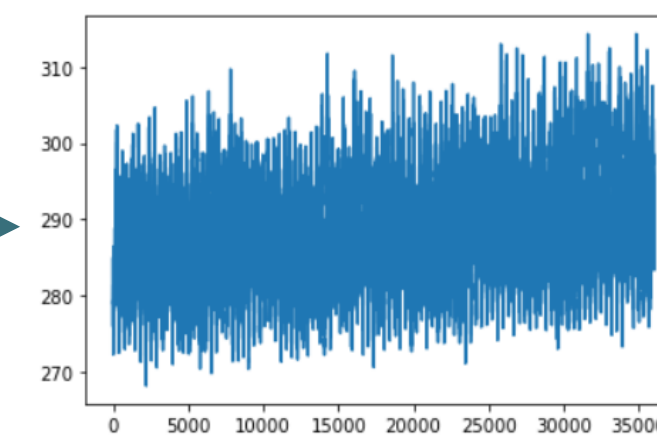
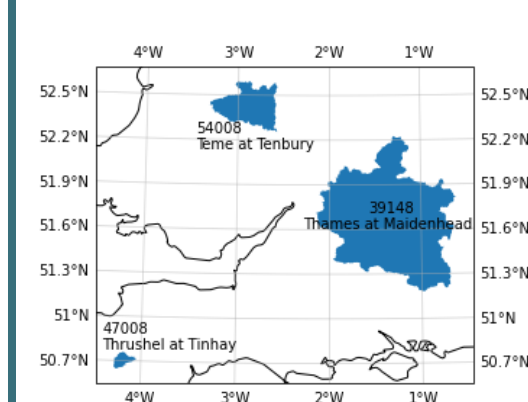
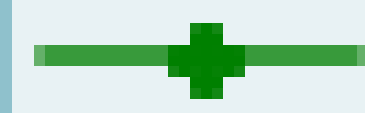
Grid point full period



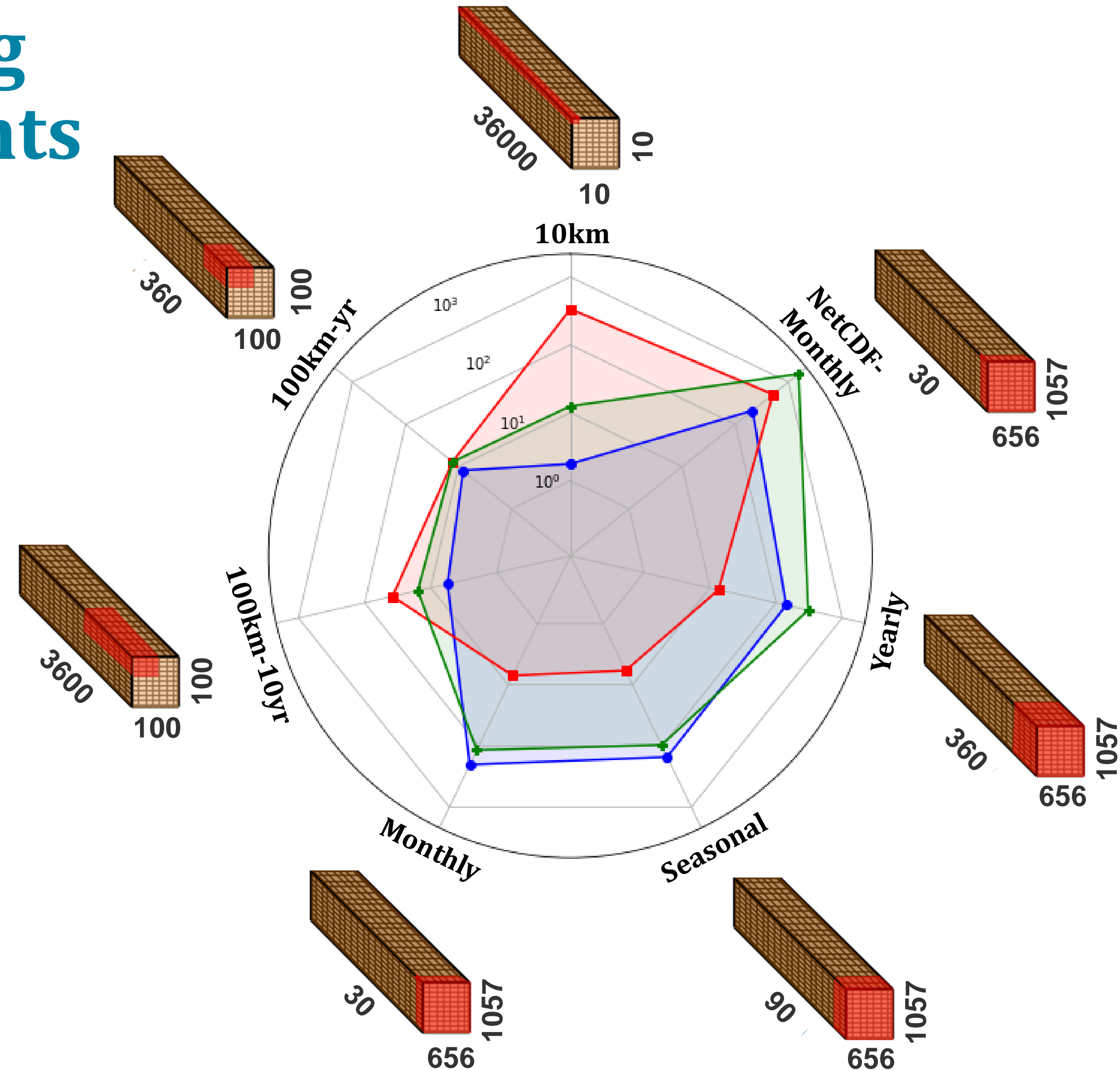
Full spatial annual avg.



Area average full time



# Chunking Experiments



# Demonstration Notebook

*(Run time: ~2 minutes)*

## Observations

COSMOS-UK  
Site Alice Holt (ALIC1)

## Model

CHESS-SCAPE ensemble  
Site nearest grid-point

API

Object  
Store

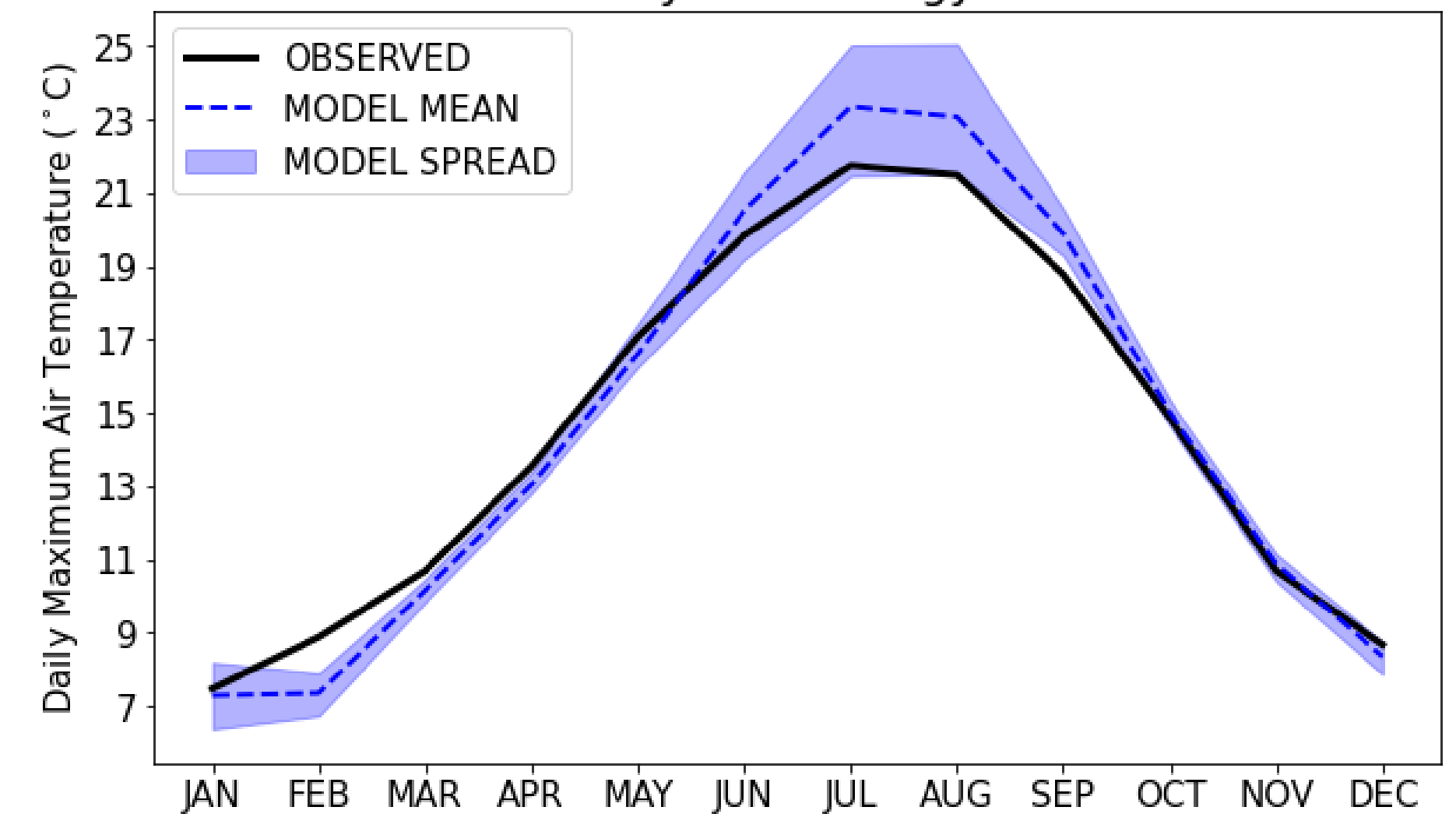
## Daily Max. Air Temperature

Monthly Climatology  
2016—2022

**COSMOS-UK Sites:**  
*Alice Holt (ALIC1)*



ALIC1 - Monthly Climatology 2016 - 2022





# GitHub Repository

[https://github.com/NERC-CEH/jasmin\\_object\\_store](https://github.com/NERC-CEH/jasmin_object_store)

NERC-CEH / jasmin\_object\_store

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achevuturi

finalising the scripts

7a2fd88 6 minutes ago

🕒 23 commits

📁	img	Add files via upload	2 days ago
📁	notebooks	finalising notebooks	yesterday
📁	scripts	finalising the scripts	6 minutes ago
📄	.gitignore	Create .gitignore	2 days ago
📄	.pre-commit-config.yaml	Create .pre-commit-config.yaml	2 days ago
📄	README.md	Create README.md	2 days ago

☰

README.md

✎

README for the GitHub repository

This GitHub repository offers sample notebooks and guides for utilizing the JASMIN Object Store. This README introduces Object Store and provides instructions for using the resources within this repository for accessing the

About

Repository with examples on how to use the JASMIN high-performance object storage

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Packages

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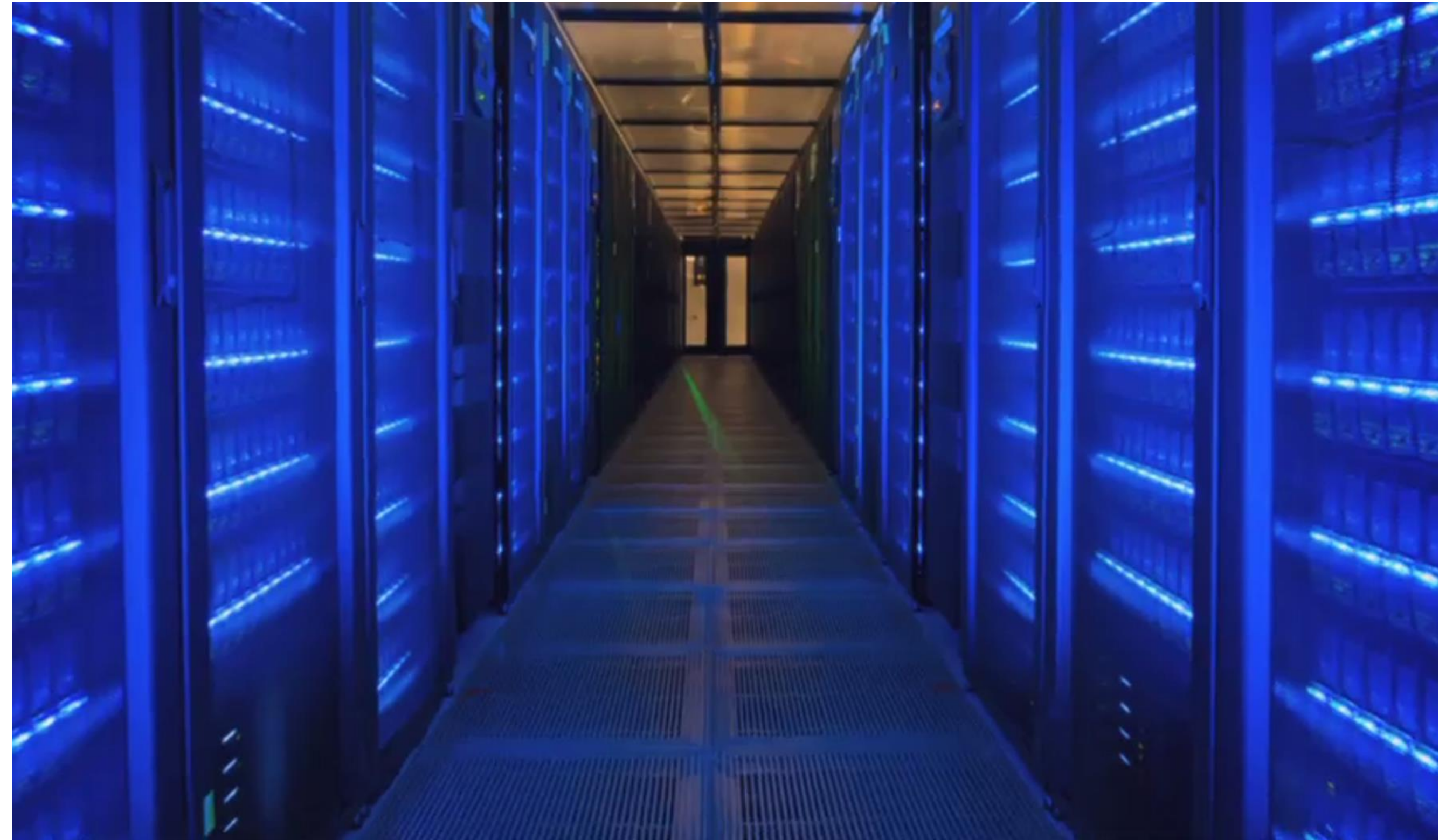
# Conclusions & Future Work

## *Successful demonstration of:*

- User applications of Object Store
- Informed decisions about file types, chunk types etc.
- Ease of external access of data, outside firewalls

## *Next steps:*

- Connect Object Store to API type interfaces
- Test Object Store for different data types



<https://www.scd.stfc.ac.uk/Gallery/JASMIN.PNG>



# Thank you

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Contact:

*amuche@ceh.ac.uk*

*matbro@ceh.ac.uk*

