Environmental metagenomics

Course outline and practical info

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About us

Organizer:

- Carlo Pecoraro, Physalia Courses
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About you

- Name
- University/Institute/Company
- Research interest(s)
- Previous experience(s) with microbial ecology, metagenomics, bioinformatics, etc.
- General hopes for this course

Course outline

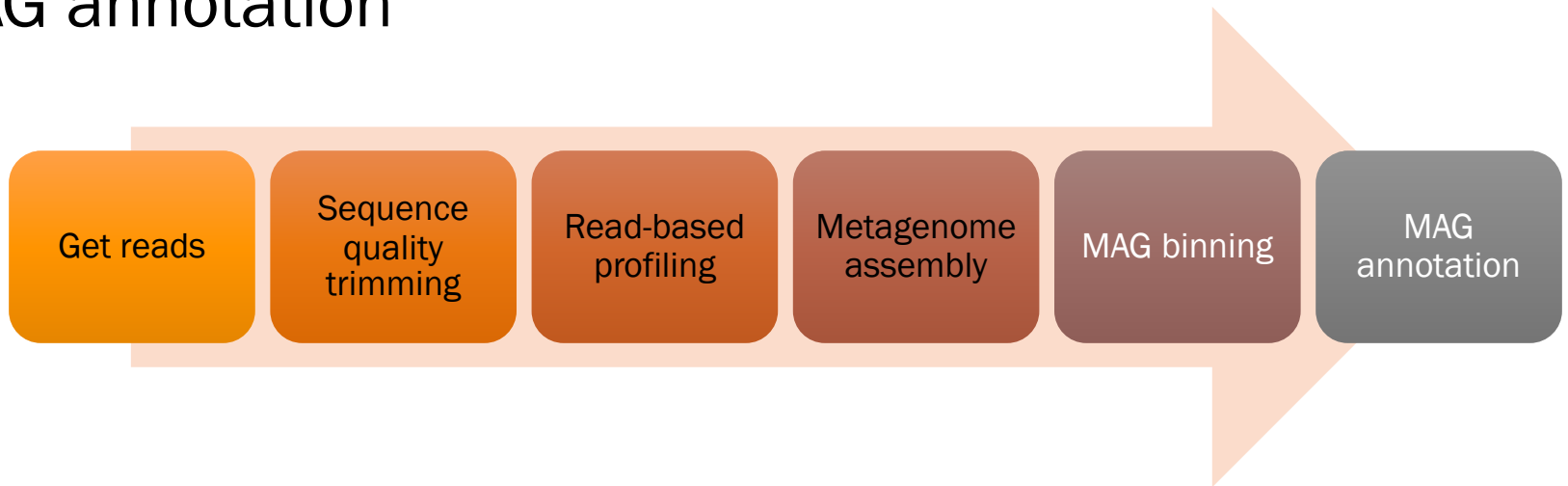
Day 1: Working with the command line and QC

Day 2: Read-based analyses

Day 3: Metagenome assembly

Day 4: MAG binning

Day 5: MAG annotation



Practical information: Zoom & GitHub

The course will take place in Zoom from **9 AM to 4 PM (CET)**

- Link to the Zoom room in Slack (#general)

The course page containing exercises and presentations is:

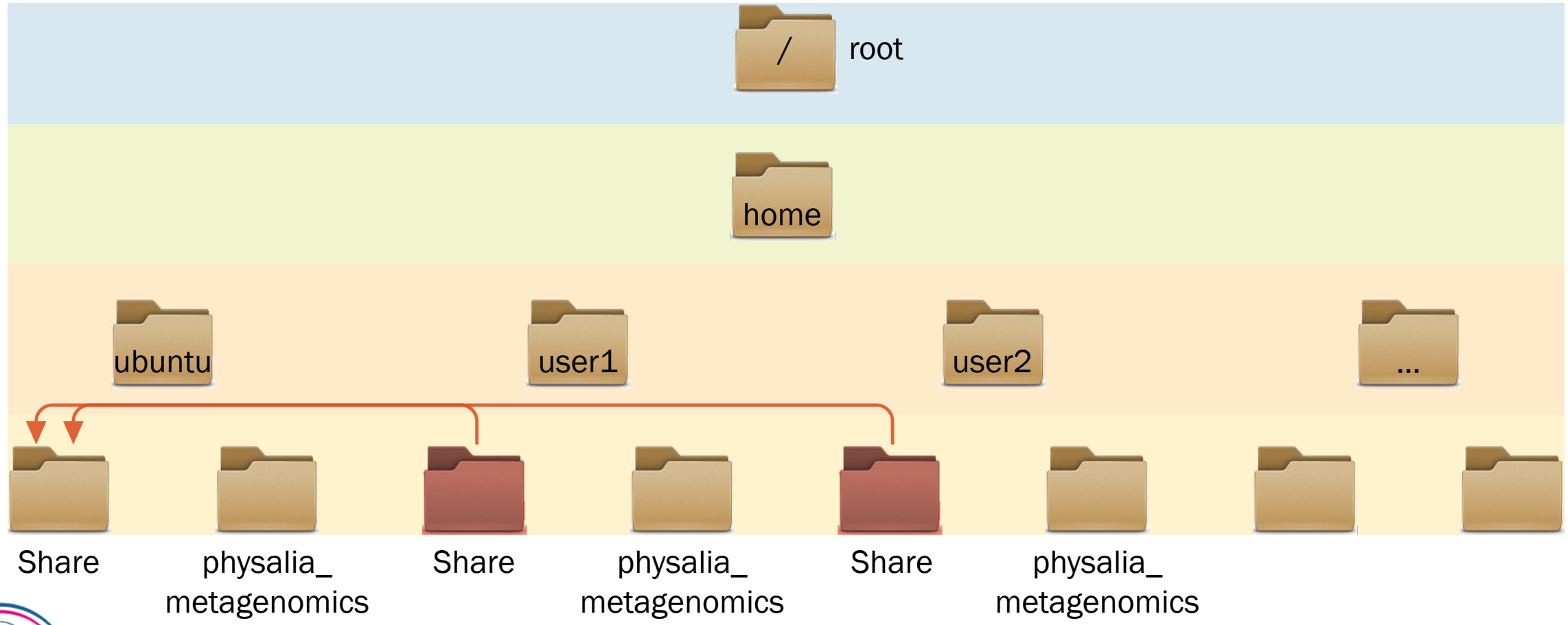
- https://github.com/karkman/physalia_metagenomics

Please bookmark this address!

Practical information: Amazon Cloud (AWS EC2)

- See Slack (#before-start) for information on how to connect
  - Remember, the IP address will change every day
- Everyone has a user, a home and a shared folder
  - E.g. Lucie Malard is user2
  - Their home folder is /home/user2
  - Their shared folder is /home/user2/Share
  - List of usernames can be found in Slack (#before-start).
- We will mostly use conda for managing the software environments
  - The environments are already set up for everyone
  - Further instructions on the GitHub page

Practical information: folders and files



Practical information: FileZilla

Set-up instructions:

- Open FileZilla
- Click File > Site Manager
- Click New site
- Change Protocol to SFTP– SSH File Transfer Protocol
- In Host, type the IP address (has to be changed every day)
- In Port, type 22
- Change Logon type to Key file
- In User, type your username
- In Key file, select your pem file
- Click connect

Kilpisjärvi, Finnish Arctic (69°N)

Kilpisjärvi, Finnish Arctic (69°N)

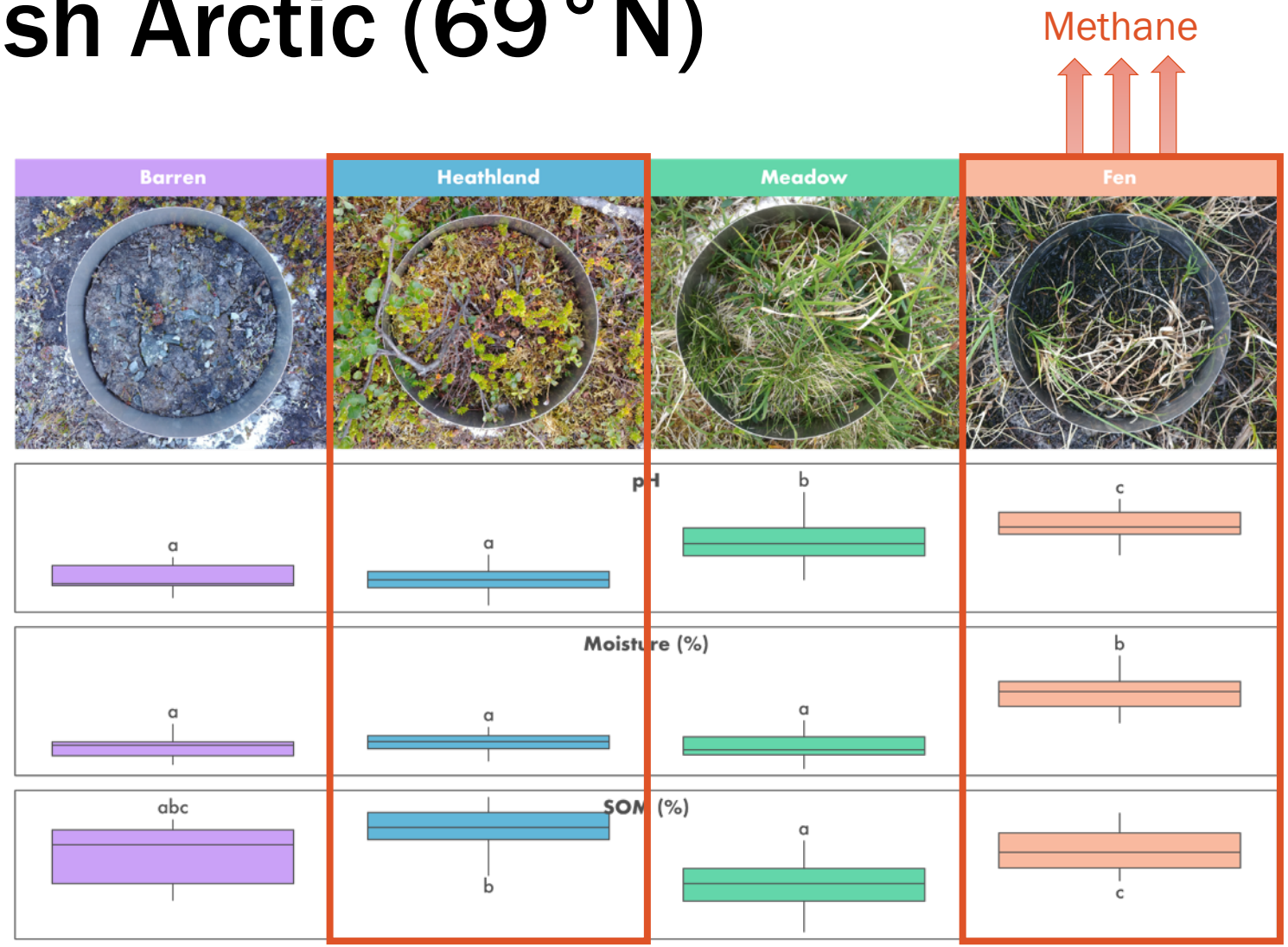
4 samples

- Sample01/Sample04: heathland soils
- Sample02/Sample03: fen soils

Sequencing:

- Illumina NovaSeq: all samples
- Nanopore MinION: Sample03 and Sample04

Real (not toy) data!



Pessi et al., 2020: https://www.biorxiv.org/content/10.1101/2020.12.21.419267v1