

# DESY Site Report

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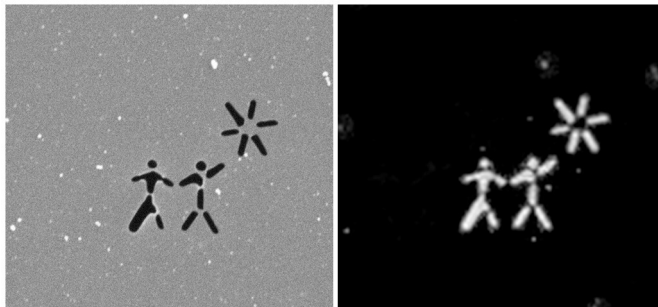
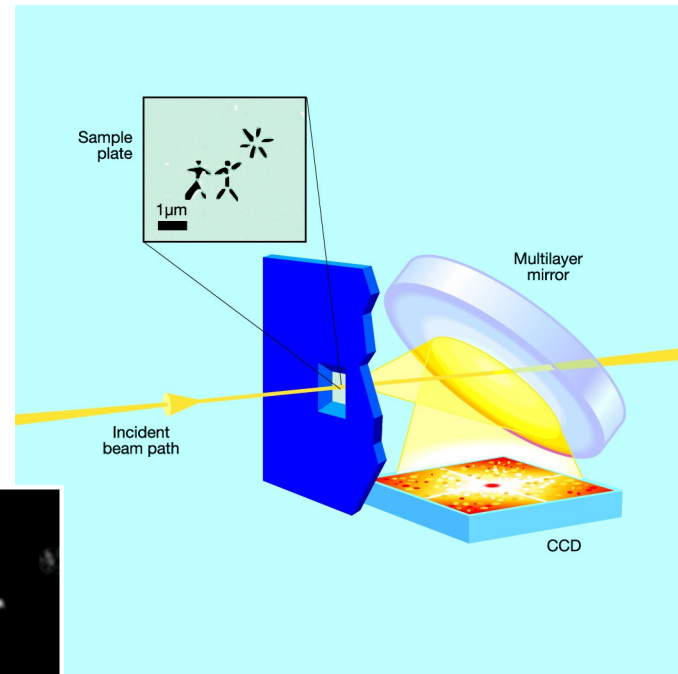
# About DESY

- Publicly funded research lab
  - Particle Accelerators
  - Research with Photons
  - (Astro-)Particle Physics



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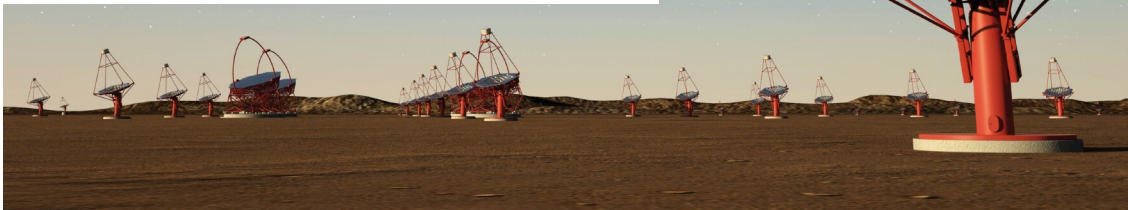
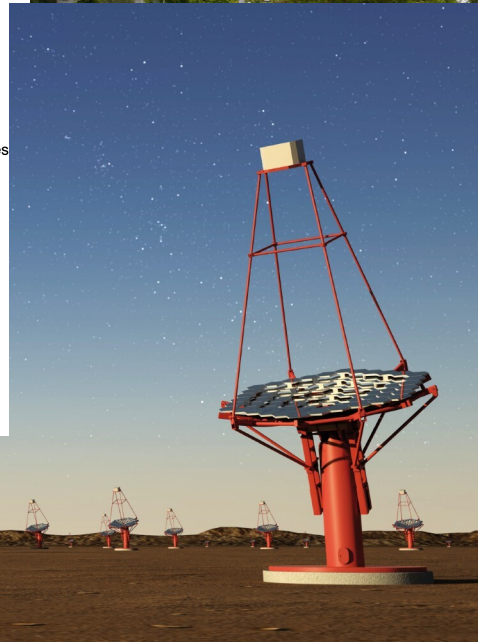
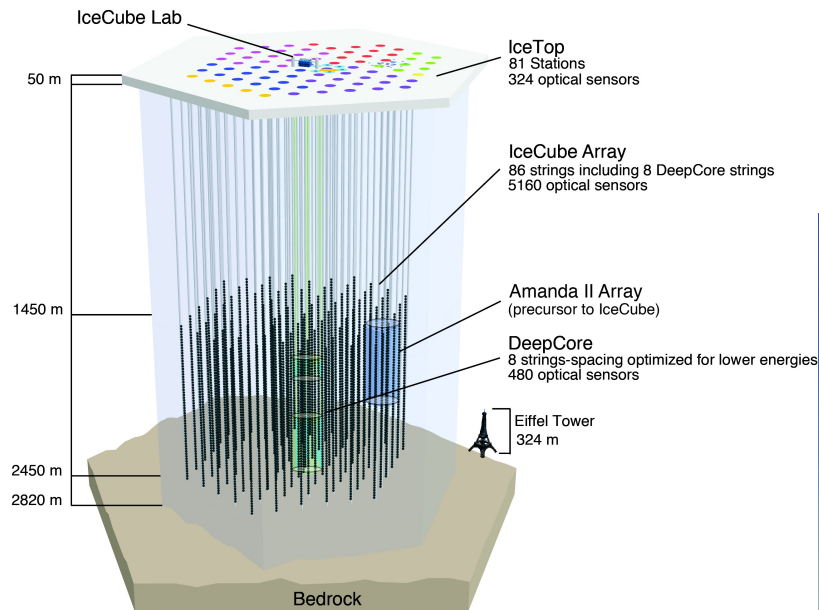
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# AFS Use Cases

- > home directories, user/group/project space
- > software repositories, web/ftp space
- > data
  - from measurement & simulation
  - derived datasets
  - images
- > access from Unix, Linux, Windows, OS X
  - client available on all systems, except grid nodes
    - > \*x system: receive it at installation time
      - Linux: from distribution
      - Solaris (few): openafs.org, recompiled
    - > Windows: available through central software management (repackaged)
    - > OS X clients: install from openafs.org



# AFS Cells at DESY

- > two sites, three AFS cells
  - Hamburg (desy.de)
    - > up to 240 TB on 35 servers, 80 TB active data, 19k volumes, 5k users
  - Zeuthen (ifh.de, to be renamed to zeuthen.desy.de)
    - > 120 TB on 20 servers, 40 TB active data, 5k volumes, 1k users
  - National Analysis Facility (naf.desy.de), distributed over both sites
    - > 40 TB on 8+1 servers, 8% used, 2k volumes, 600 users
    - > to be shut down and integrated into desy.de soon
- > one Heimdal realm per cell
  - Hamburg/Zeuthen realms are in sync, mutual trust



# Services

- > self service for managing home quota (through user registry)
- > self service for managing group space (for group admins)
- > hosting group owned file servers (our specification)
- > backup: self service recovery for home/group space
- > disaster recovery for all volumes (Hamburg only)
  - butc, backend store moving from TSM into dCache
- > FTP mirror for selected areas
  - data exchange with external users
- > monitoring
  - nagios, xymon, other





- > Linux servers (File and DB)
  - ext3, ext4, xfs in use for vice partitions
  - evaluating zfs
- > SAN and direct attached storage
- > SAS and NL-SAS drives
  - no flash/SSDs (yet?)
- > mostly bare metal servers
  - two Xen VM servers in use with low traffic
  - KVM (EL6) tested – poor performance

- > Hamburg: space extensions planned
  - for accelerators, photon science, particle physics
- > Zeuthen: cell hasn't grown for years
  - almost all bulk data now stored in dCache and Lustre
- > discussing cloud storage as replacement for user/group volumes
  - incl. “XXL” user volumes (with reduced backup frequency & IOPS)
- > investigating alternatives for a secure, globally accessible, low maintenance file storage system