File **rains** is a test file (rain abundance in Trieste for each month since 1995).
Here is a list of useful commands to solve the following exercises:

- cat, head, tail
- grep
- grep -v
- sort -kN
- sort -r
- grep "..." file | awk '{}'
- awk: NF (number of columns), NR (row number), $N (value in Nth column)
- awk: array = x[ ]
- awk: power=x^2; root=sqrt(x)

On **rains** file calculate:

- average and standard deviation of rains in year 2000
- year with most/least rainy April

File **3fhr.pdb** contains information about the high resolution crystal structure of a protein complex.
Lines beginning with word "ATOM" contain position of specific atom (x :$7, y:$8, z:$9).
On **3fhr.pdb** file calculate:

- residues (type:$4) with alpha carbon distance (CA:$3) smaller than 5 Angstrom
- residues with maximum CA distance
- radius of gyration: $R_g^2 = \frac{1}{N}\sum_{k=1}^{N} \quad (r_k - r_{mean})^2$