What this code is about

The C++ code third.cpp computes the third term in equation (3.10)

$$\sum_{k=0}^{\infty} \frac{(-1)^k \mu_{-(k+1)}}{\beta^k} = \sum_{k=0}^{d} \frac{(-1)^k}{\beta^k} (A_k + B_k + C_k) + \sum_{k=d+1}^{\infty} \frac{(-1)^k}{\beta^k} D_k, \quad (1)$$

where

$$C_k = \sum_{m=k+1}^{d} c_m m! \sum_{l=k+1}^{m} \frac{(-1)^l \, \Gamma(l-k-\nu) 2^{l-k-\nu}}{(l!)^2 (m-l)!}, \quad (2)$$

The code requires the $d+1$ numbers c_m's as inputs. These are read-in from the file Constants.txt. The code outputs values for for various β contained in the file THIRD.txt.

The file compile.job is a SLURM script to compile the code in an HPC and generate an executable.

The file together.job is a SLURM script to run the executable in an HPC.

The file mpfr.sh is a shell script used to compile and run the code in an Ubuntu 22.04 local machine.