Climate Forecasting Unit (CFU)
of
Catalan Institute of Climate Sciences (IC3)
Barcelona, Spain

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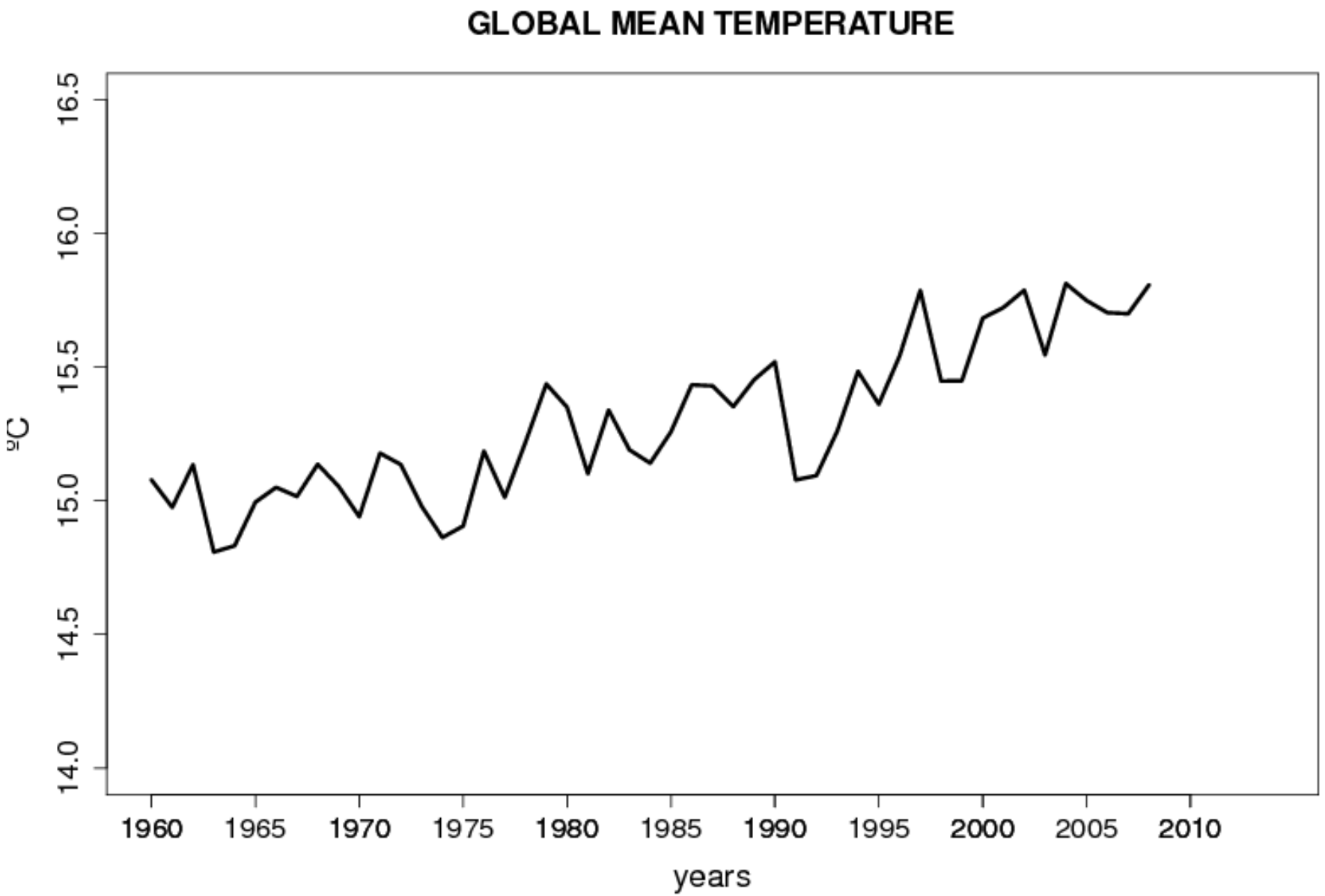
CFU: Main features

- Main objective: monthly, seasonal and decadal global climate forecasting and analysis.
- Other: development of a climate services capability.
- Nine members: 1 senior (structural), 3 postdocs (2 str), 2 PhD (str) and 1 master students, 2 technicians (1 str).
- New group; staff starting between Oct 2009-Apr 2010.
- Resources: IC3 structural funding, start up, two EUprojects, one contract (Metafor), one MICINN project; invitations by MedCLIVAR, NCAR-ASP, WCRP, ECMWF …
- Computation: BSC (700 khours-CPU, IBM Power5), ECMWF (400 khours-CPU, IBM Power6), CFU local network (i3,i7 desktops); looking forward to using Ithaca.


GLOBAL MEAN TEMPERATURE
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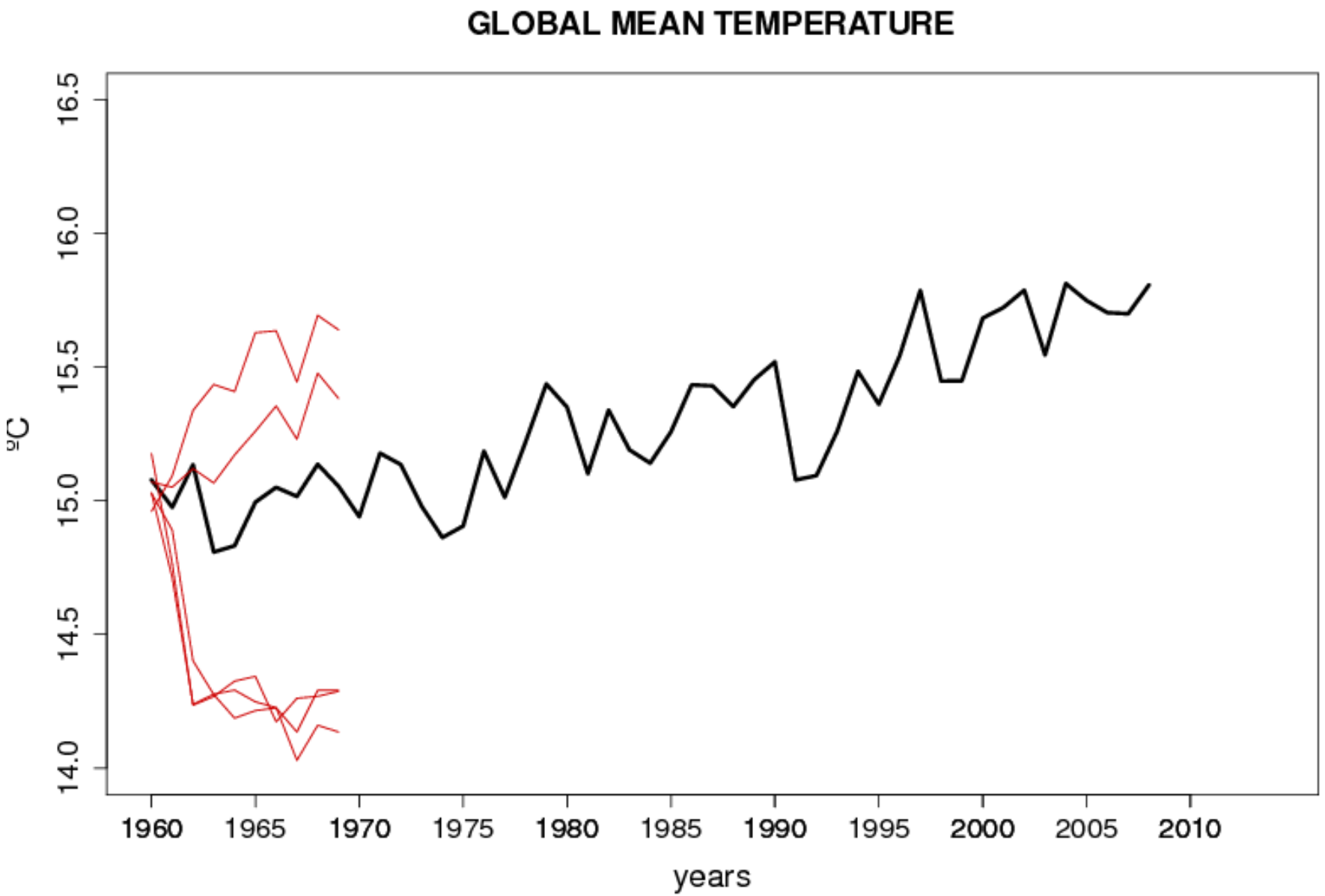
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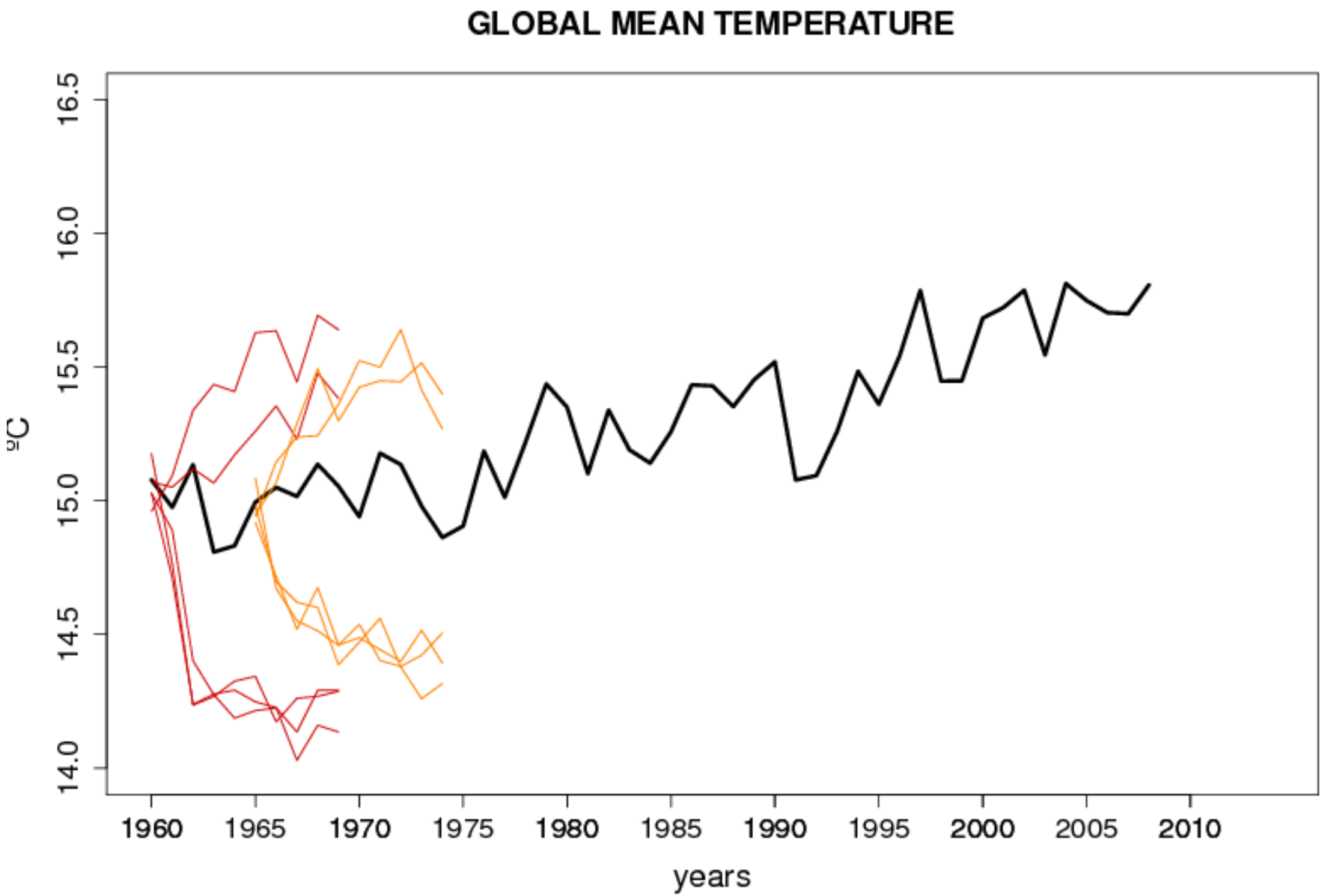
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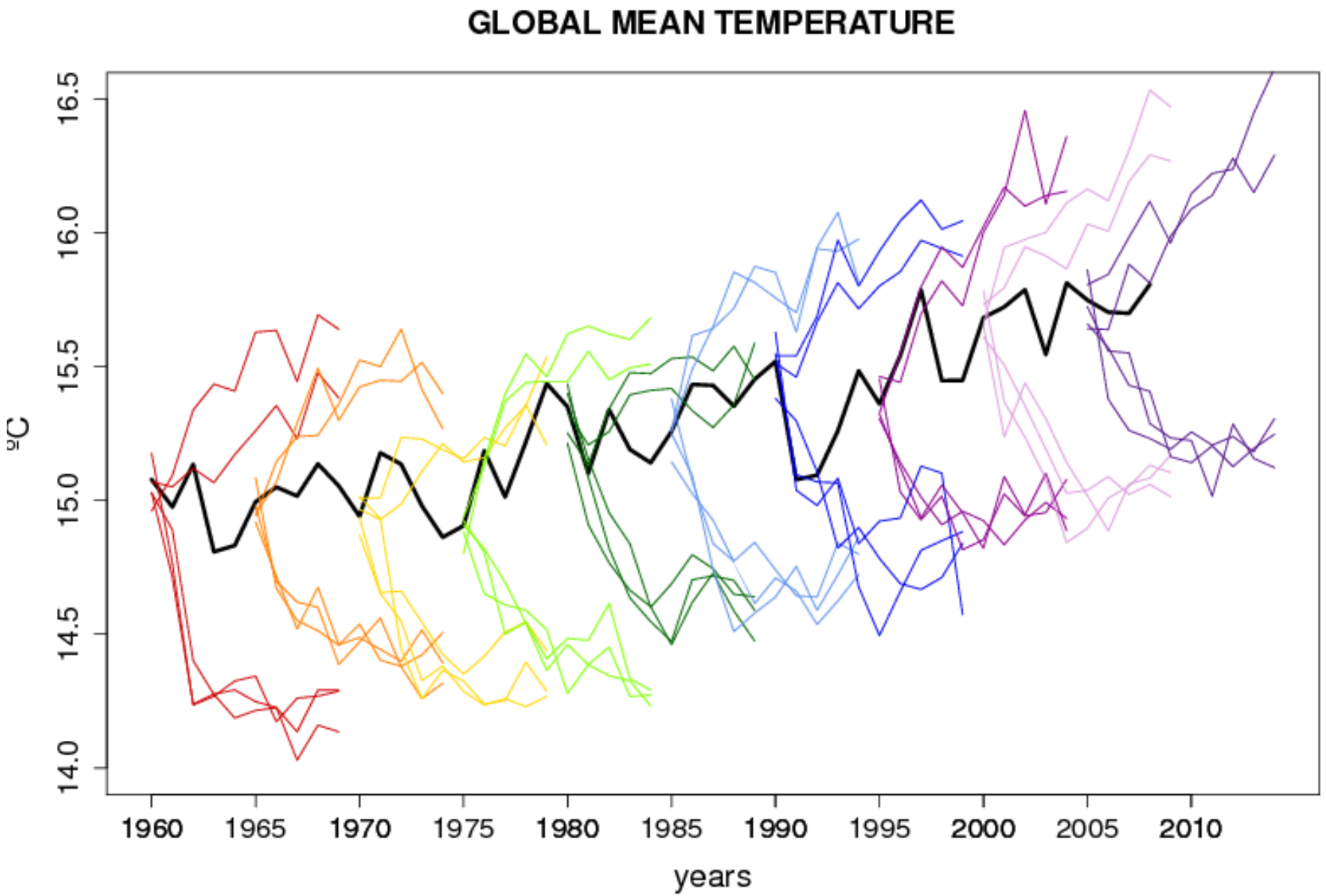
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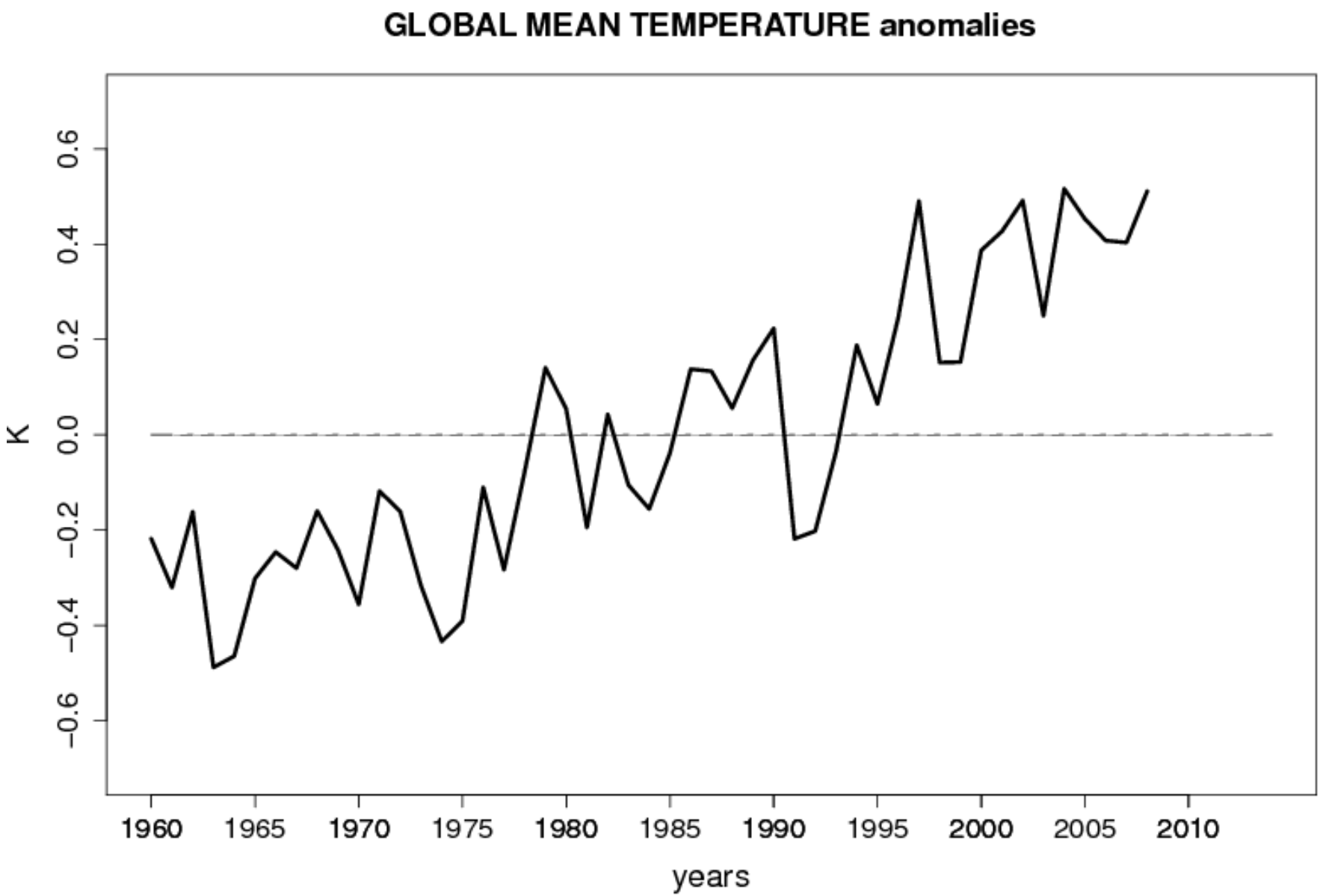
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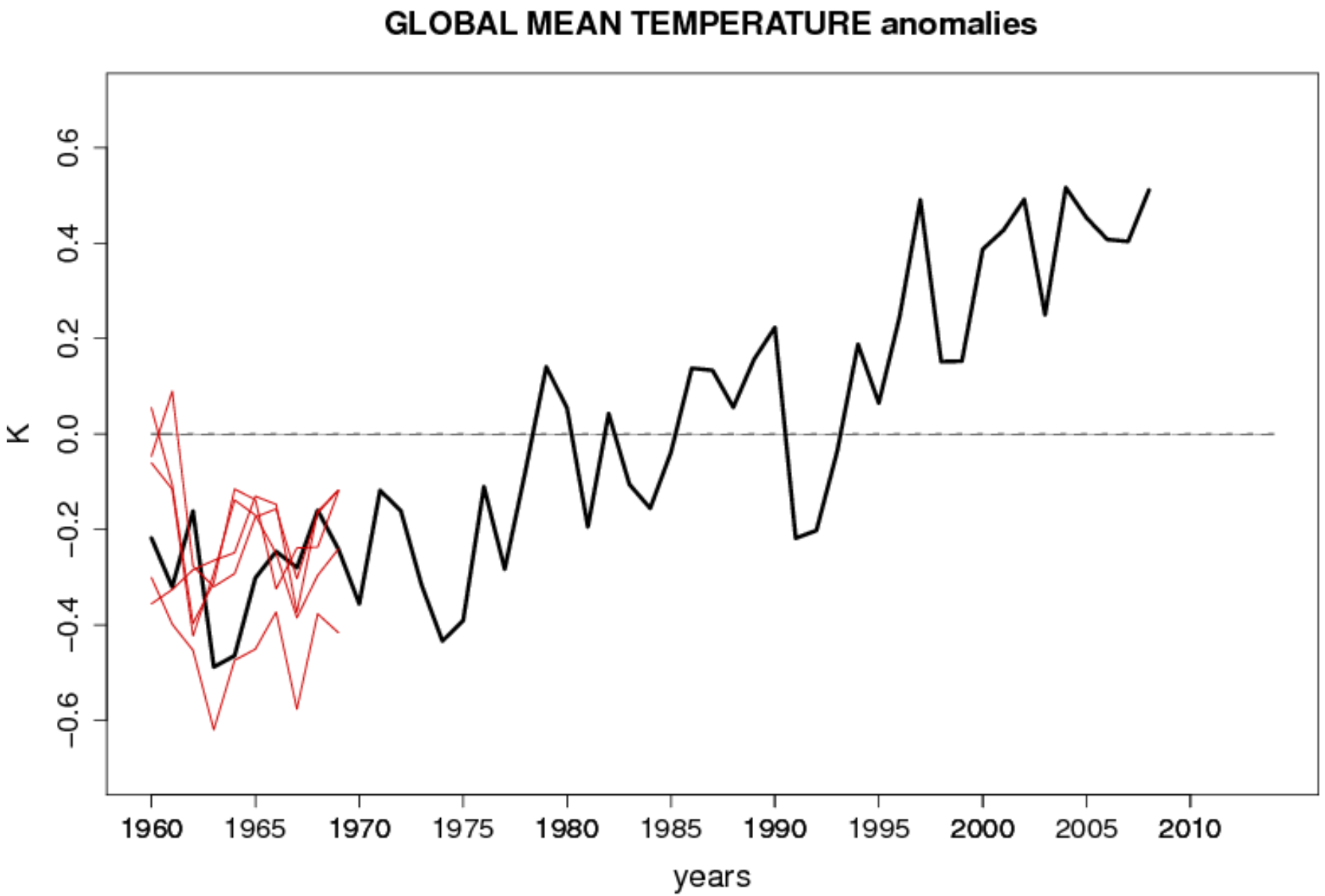
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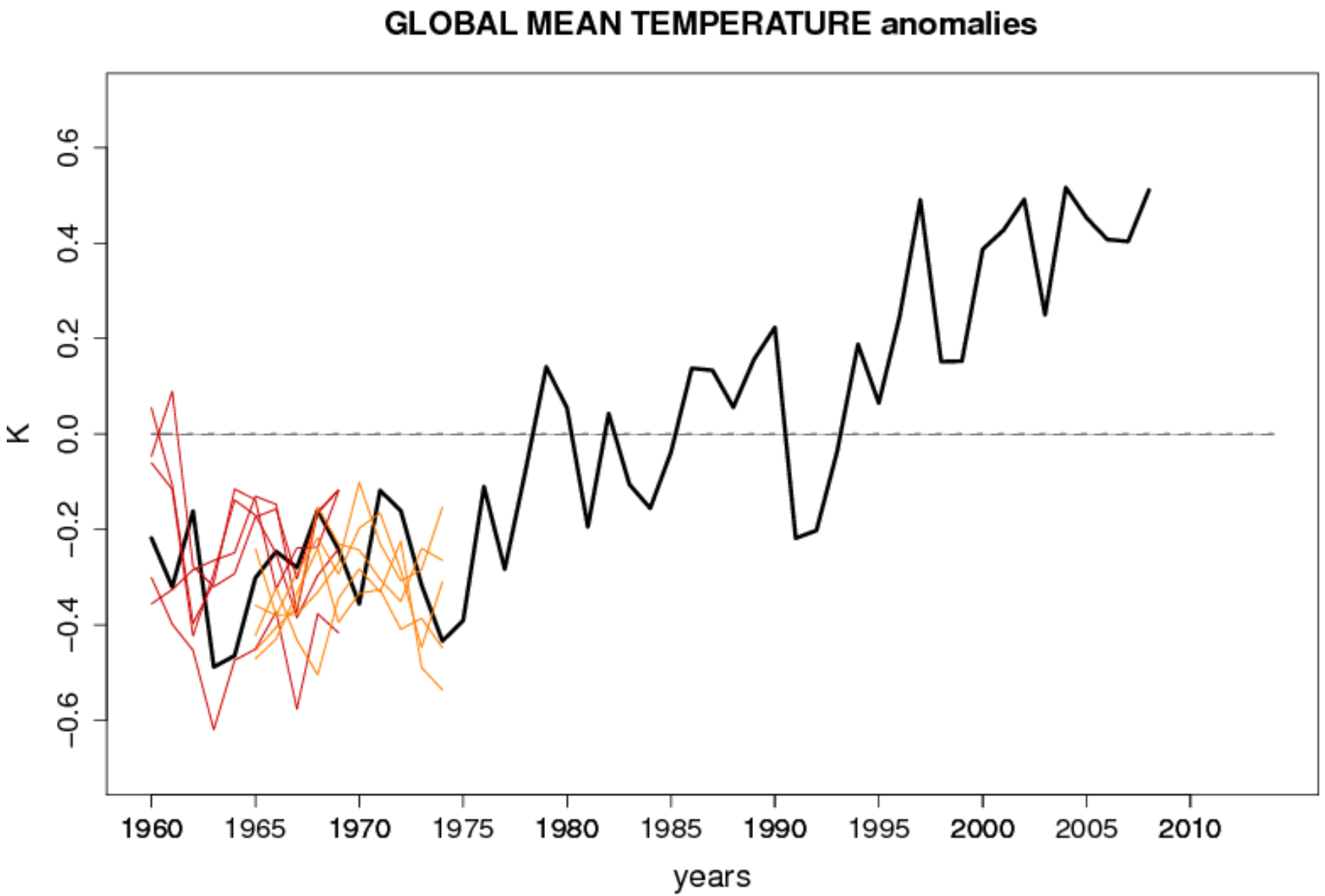
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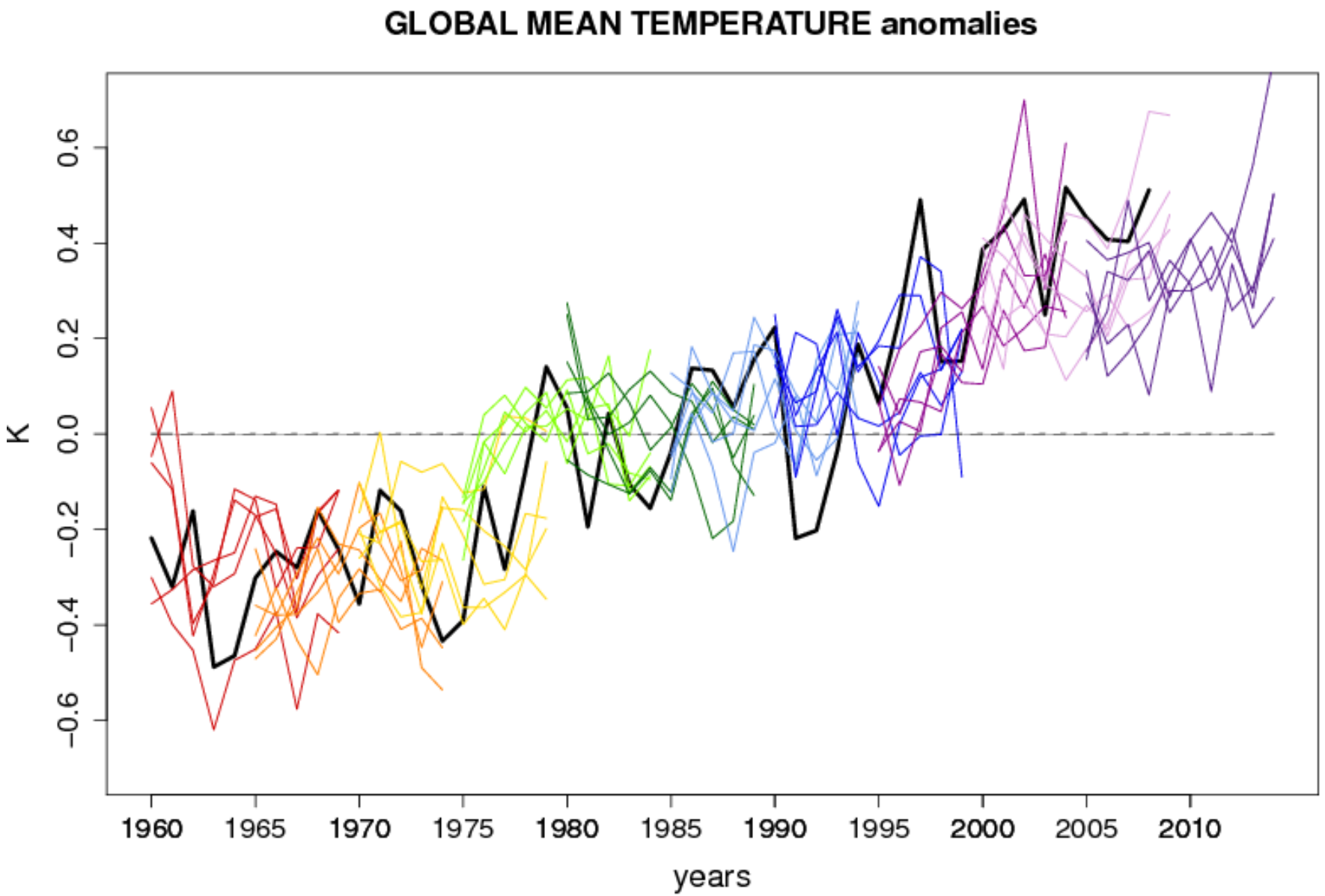
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- We run EC-Earth (IFS/NEMO) on **45 cores** (IFS: 28, NEMO: 16, OASIS3: 1)
- For a decadal experiment: The model runs one start date and one member for 10 years and produces approx. 650GB data (10 start dates and 5 members approx. 32 TB)
- The table shows the number of cores that we could use simultaneously

No. of Start Dates	No. of Members	No. of Independent Jobs (simulations)	No. of Computing Cores
5	5	25	1125
10	5	50	2250
10	10	100	4500
20	10	200	9000
20	20	400	18000

- We work on: Python suite of scripts to automatically dealing with no. of experiments that may contain thousands of jobs (autosubmit)
- Record-keeping to restart the complete experiment or part of experiment (on the same HPC or some other HPC).
- We need: Wrapper over Queue System and HPC Scheduler to manage many simultaneous jobs to participate on tier-0 machine