LISA Science & Data Analysis

GW sources	Instrument LISA	**L0**	Pre-DA (SOC)	**L1**	DA (DPC)	**L2,L3**	GW sources science
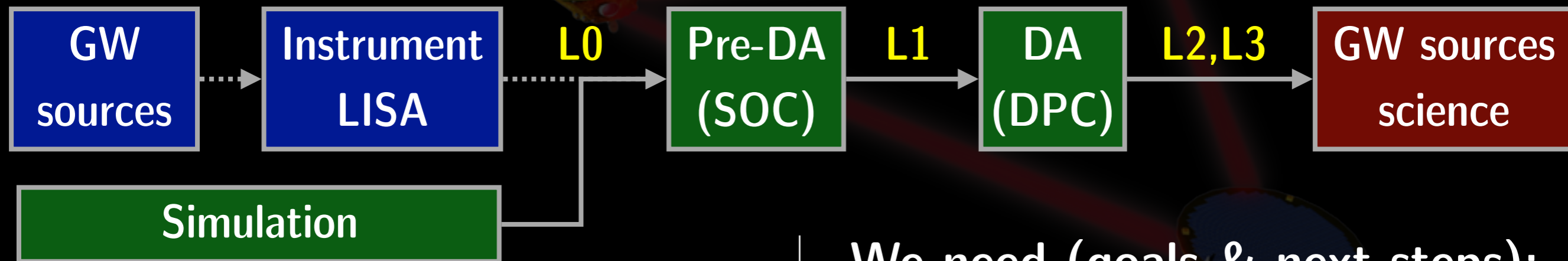
Simulation

We have:

▸ LTPDA

▸ Waveforms

▸ MLDC results & codes (?)

▸ Simplified simulations (LISACode)

▸ Tools for science performance estimation

We need (goals & next steps):

▸ Realistic DA : strategy, pipelines

▸ Precise simulations: end-to-end simulator(s)

▸ New MLDCs:

  ▸ Step 1a: simple noises + realistic number of GW sources

  ▸ Step 1b: simple GWs + realistic instrument/noises

LISA Data Processing Center

- LISA data processing (CNES Phase0) : first analysis of this kind, uncertainties in the number of sources, regular reprocessing, ...

  => constant evolution + large fluctuations of the computational needs

  => continuous integration + hybrid computing (clusters+cloud)

- DPC activities: L1 → L2/L3, alert, diffusion in consortium, ...

- DPC unique entity developing the DPC software (DA & sim. codes, services, OS) and organizing Data Computing Centers (disks+cpus)

- Contribution to DPC: developers and/or DCCs

- Proto-DPC in place: used for simulations, science perf., ... It's a tool for the consortium: scientists/engineers developing directly within the DPC

- DPC is the natural host for future activities on DA and simulations

Ground segment in LISA proposal