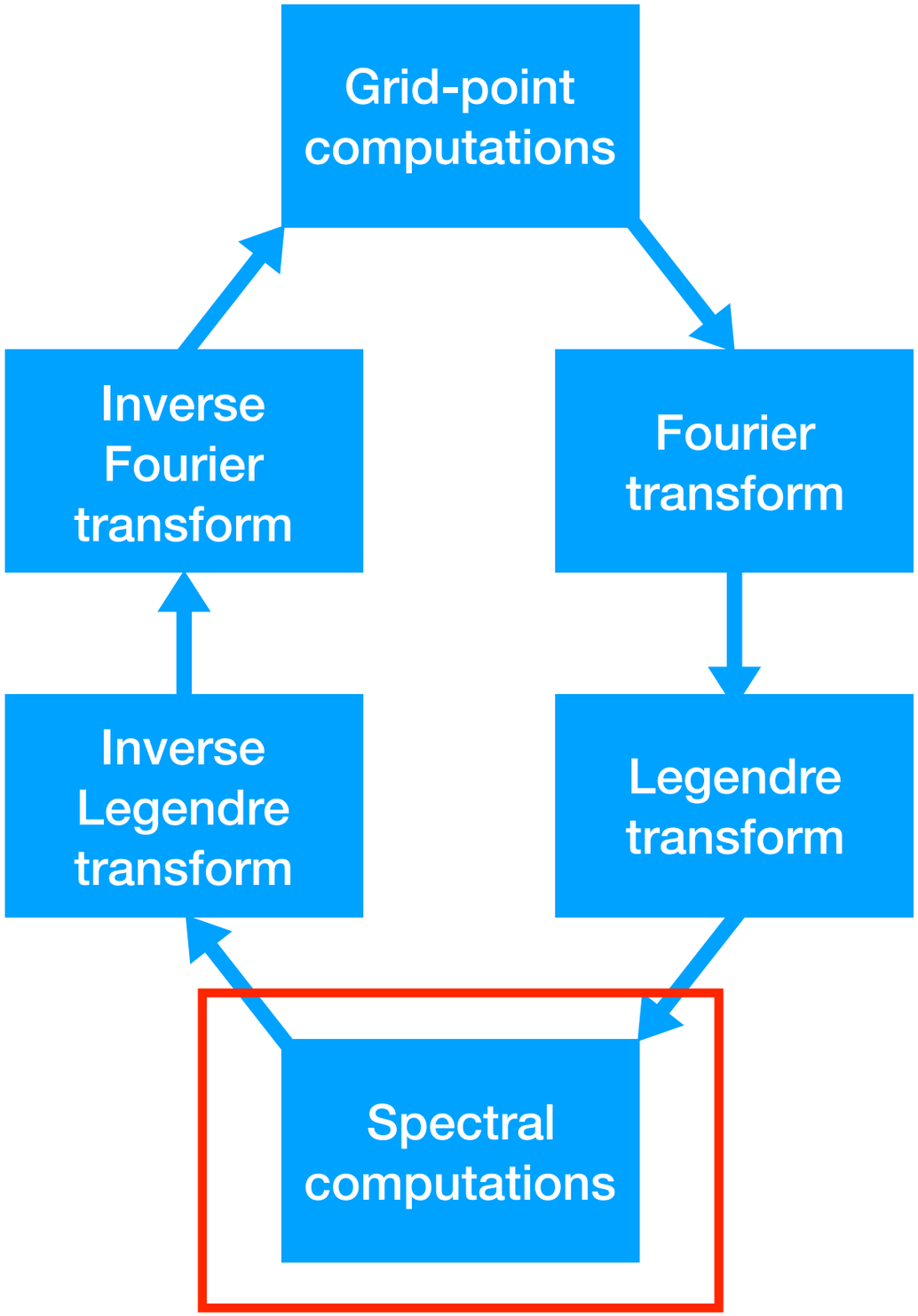
Spectral dynamical core schematic



What we've done

- Reduced precision calculations in spectral-space only.
- Spectral transforms and grid-point calculations in double precision.

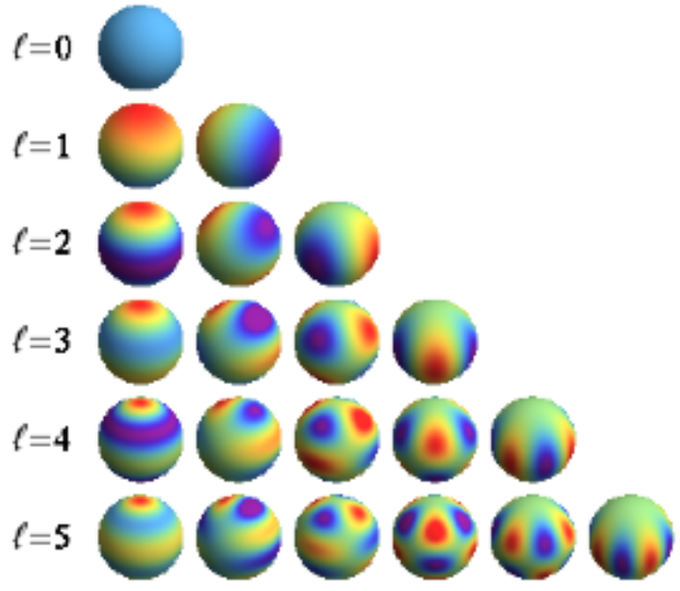
Will …

- introduce rounding errors to prognostic variables: vorticity, temperature etc.

Won't …

- cover all algorithmic error propagation

Why spectral space?



- Spectral models represent fields as a sum of modes representing different lengthscales.

- Can we reduce precision when calculating the small scales?

- This is appealing due to the high inherent uncertainty in small scale dynamics (parametrisation, viscosity, data-assimilation,…).