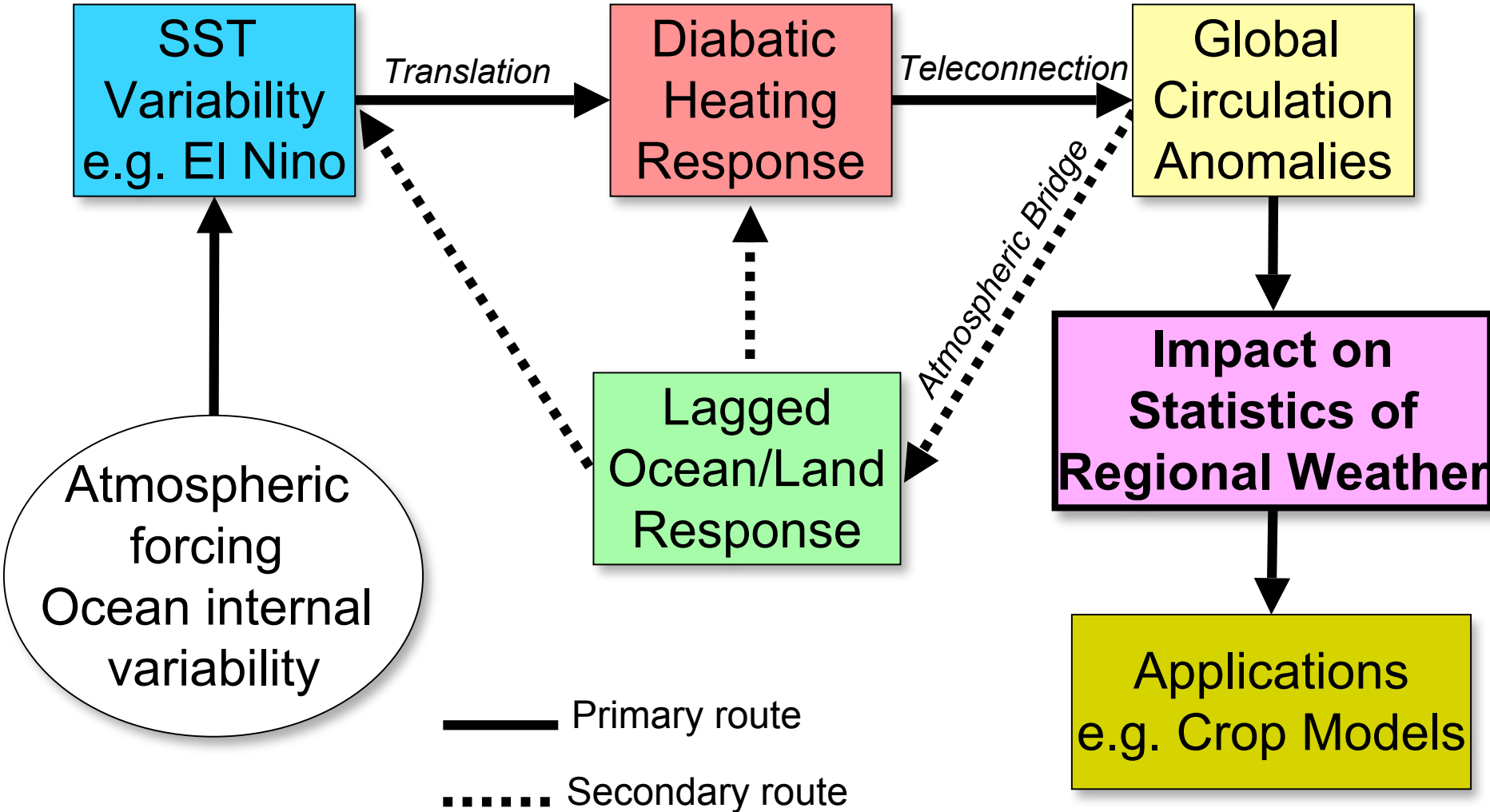


Intermediate Timescales: Big Issues

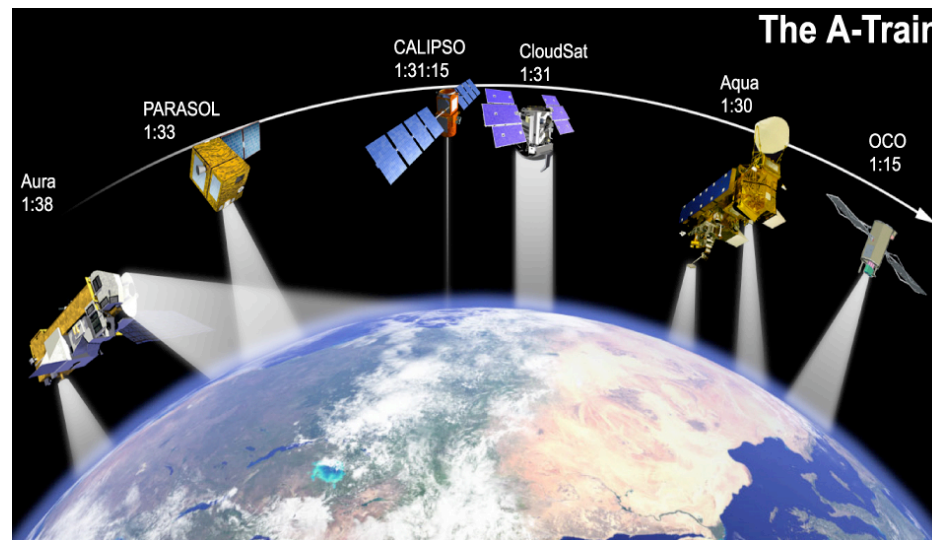
- Mean state matters! The source of model error is often subtle and not necessarily local.
- Resolved and unresolved waves are crucial components of tropical circulation but handled poorly.
- Key phenomena (e.g. MJO) are still not fully understood and remain poorly simulated.
- Atmospheric water cycle, especially the partitioning between convective and stratiform precipitation, remains a major source of uncertainty.
- Vertical diabatic heating profile is a critical factor for atmospheric modes and teleconnections, but is likely to be incorrect in many models.
- Increasing evidence that horizontal and vertical resolution affects synoptic and intraseasonal variability, as well as the mean climate.
- Even at intermediate timescales, coupled processes play an important role but the mechanisms still need to be clarified.

VARIOUS STAGES OF MAKING A CLIMATE PREDICTION



Intermediate Timescales: Recommendations I

- Considerable benefits of applying NWP techniques to understand AGCM errors needs to be extended to coupled models e.g. via seasonal prediction?
- Advances in defining MJO 'metrics' (diagnostics) need to be developed for other phenomena (e.g. tropical waves) and should aim to be process-based as far as possible
- Need to develop the methodologies for exploiting Graeme's 'Golden age of EO from space'! – especially what it tells us about convective/stratiform precipitation, vertical profiles of cloud and rain production.



Intermediate Timescales: Recommendations II

- A strategy for investigating the role of resolution in model errors, both coupled and uncoupled would benefit from coordination.
- There is still a place for idealised and theoretical studies of the atmosphere, ocean and coupled system which will facilitate better understanding of the interactions between physics and dynamics.
- What about the land surface?