

ENSEMBLE LAND SURFACE MODELING AT JPL

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JPL CLIMATE INITIATIVE

- Earth System Models evaluation against satellite observations.
- Land, ocean, ice, atmosphere intersect through surface-atmosphere exchange; focus on water and energy.
- Reduction in uncertainty in global estimates of land evapotranspiration.

CARVE

- What is the current status of global land surface models in CH₄ and CO₂ fluxes in the Alaskan Arctic?
- Do recent improvements in model physics improve comparison against observations?
- How can we improve models to better represent Arctic processes?

Benchmarking

- ILAMB, MsTMIP, NACP, LBA-DMIP, TRENDY, ENSEMBLES.
- Satellite, Tower, ...
- Upscaling
- Space (pixel, biome, basin, region), time (diurnal, seasonal, annual, inter-annual, decadal; timing, amplitude)
- Uncertainty
- Metrics
- ...

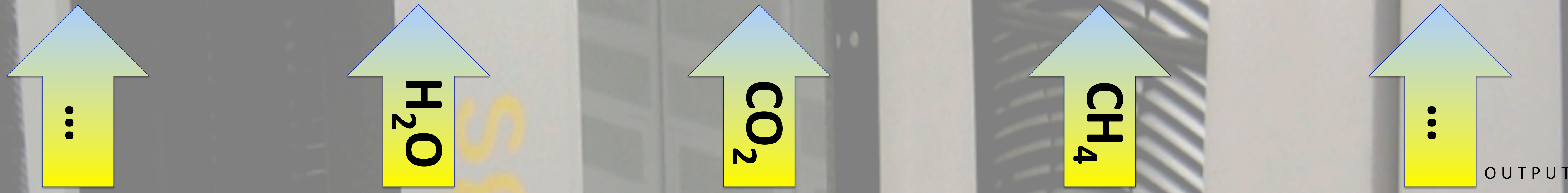
ESDR

- What are uncertainties in satellite observations of land surface temperature (LST)?
- How do those uncertainties propagate through models that rely on LST, i.e., LST-based evapotranspiration?

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APPLICATIONS

BACK END (COMPILE MODEL OUTPUT, CONVERT UNITS, PRODUCE MODEL DATA/MAPS)



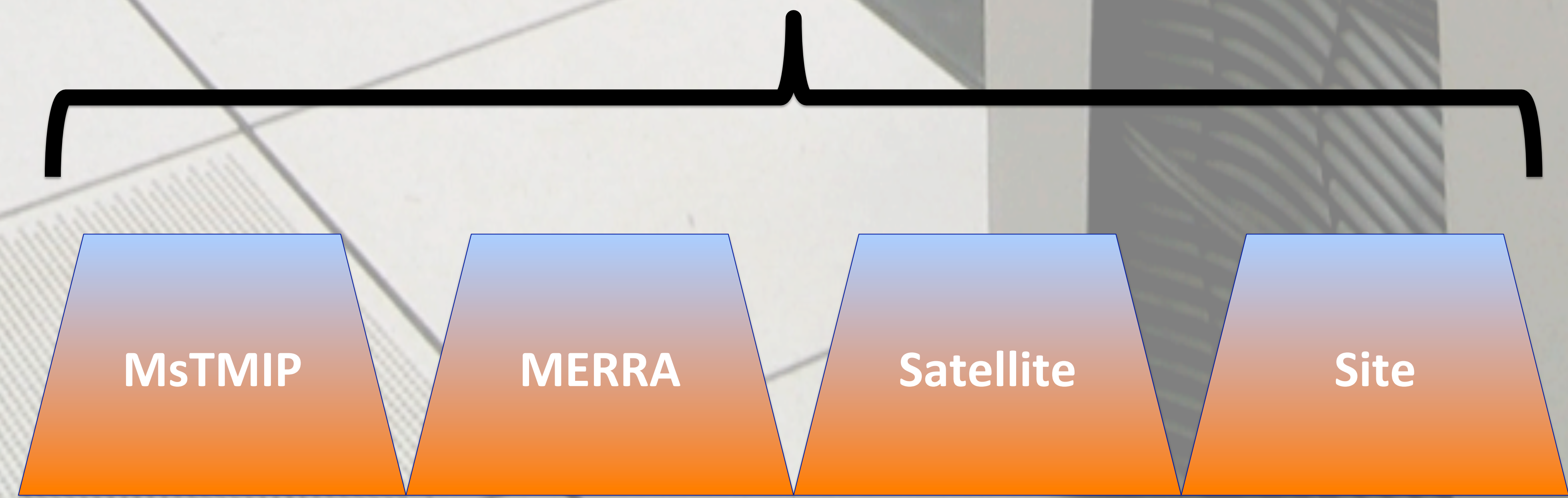
DEDICATED MODELS (e.g., ET)

UCB	MOD16	BESS
SEBS	ALEXI	METRIC

GLOBAL LAND SURFACE/
TERRESTRIAL ECOSYSTEM/
DYNAMIC GLOBAL VEGETATION MODELS



FRONT END (INGEST DIFFERENT FORCING DATA, LINK TO MODEL REQUIREMENTS, SPIN-UP SPECIFICATIONS)



FORCING/INPUT DATASETS