Tables and Diagram - Thesis (Methodology + Data)

Coupling Remote Sensing, Morphology, and Microclimate Simulation to Analyse Urban Heat

Compilation notes: This file is pure LaTeX and does not require Python. To compile, run:

```
pdflatex 071225_table_diagram.tex
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or alternatively:

```
xelatex 071225_table_diagram.tex
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Table 1: Data sources (all inputs are open-access)

Step	Raw Data Sources
Abbrev.: L8/9 = Landsat 8/9; GEE = Google Earth Engine; LST = Land Surface Temperature; Ta = air temperature; DEM/DSM = Digital Elevation/Surface Model; GOB = Google Open Buildings; OSM = OpenStreetMap; INEGI = Instituto Nacional de Estadística y Geografía.	
Phase 1 (Macro): Thermal mapping + vulnerability co-location	
1.1	Landsat 8/9 (L8/9) Collection 2 Level-2 products (surface reflectance + LST; summer scenes, multi-year climatology) processed in GEE
1.2	Local meteorological stations (e.g., RedMet) for calibration; satellite indices from Step 1.1
1.3	Census microdata at block level (INEGI 2020) and administrative boundaries; Ta predictions from Step 1.2 aggregated to blocks
Phase 2 (Meso): Urban morphology + street network configuration	
2.1	Building footprints and heights (e.g., Google Open Buildings + auxiliary height sources when available)
2.2	Street network (OSM or official network dataset)
2.3	Thermal layers from Phase 1 + outputs from Steps 2.1–2.2 for form–network coupling analyses and corridor selection
Phase 3 (Micro): Biometeorological simulation for pedestrian exposure	
3.1	High-resolution DEM/DSM; building footprints/heights (Step 2.1); canopy/vegetation layers (e.g., NDVI-derived); meteorological forcing (station data)
3.2	Simulation engine and parameters (UMEP/SOLWEIG in QGIS); observation points/paths along selected corridors (from Step 2.3)

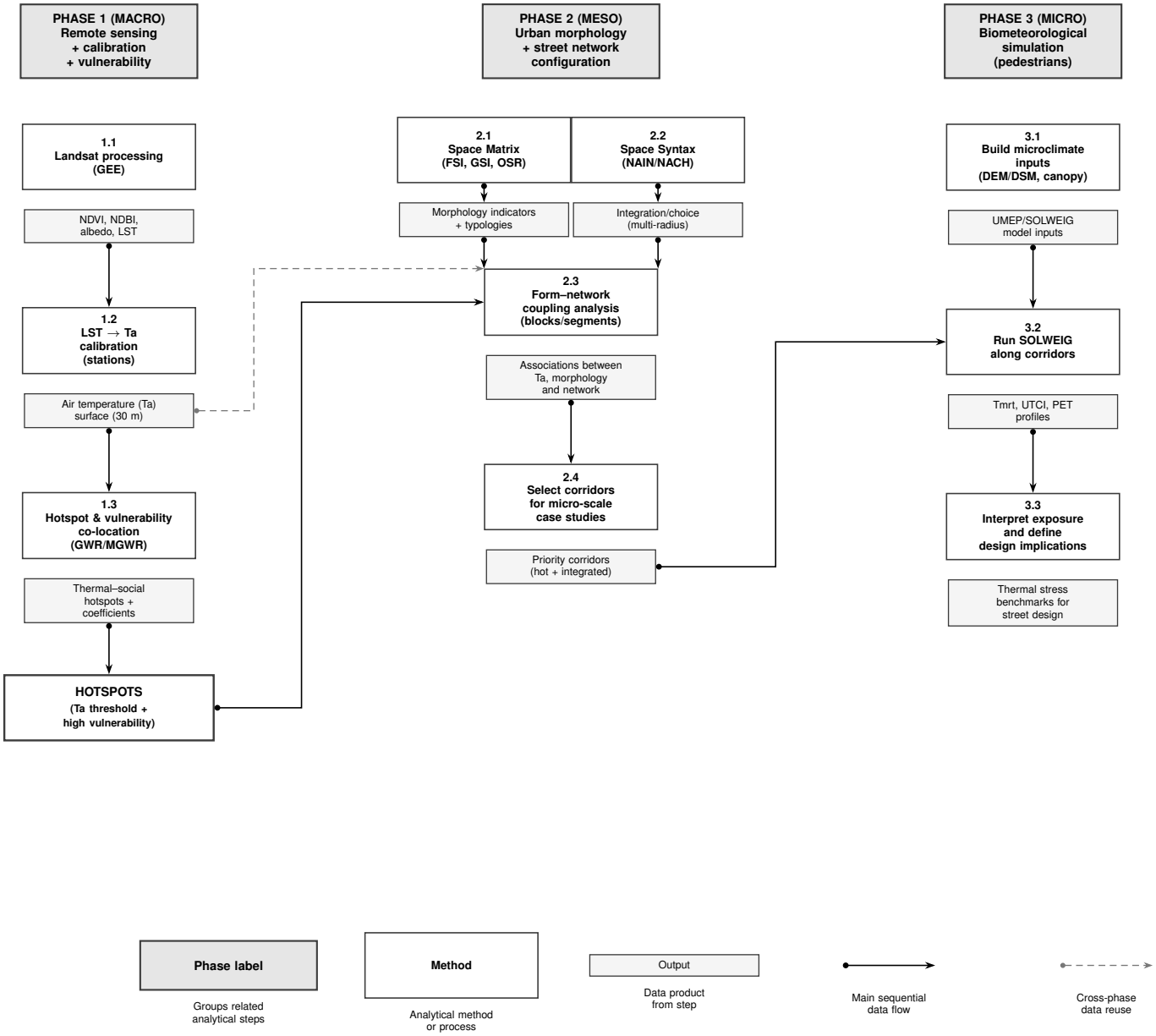

Figure 1: Three-scale methodology linking macro screening (thermal–social hotspots), meso characterization (form + network), and micro simulation (pedestrian thermal stress).