Energies and cities: fundamentals to understand urban heat islands and mitigation opportunities



Thermodynamics of cities

- Thermal energy conservation
- Heat transfer processes: conduction, convection, radiation
- The surface energy balance equation for urban interfaces.
- The energy budget for a whole urban canopy
- Anthropogenic heat and water vapor emissions

Energy budget in cities

- The Urban Canyon Concept
- Energy budgets of roofs, grounds, and walls
- Thermal properties and their impact on urban energy budgets
- cool versus dark roofs

Radiation I: Physics

- SW and LW
- Radiative Properties of Urban Materials
- Radiation on a single building



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E Link for connection: to be provided via email upon request

