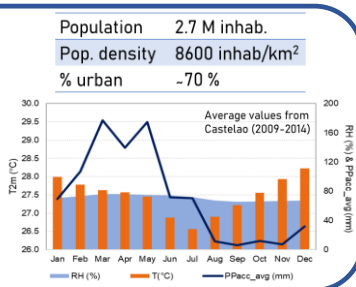
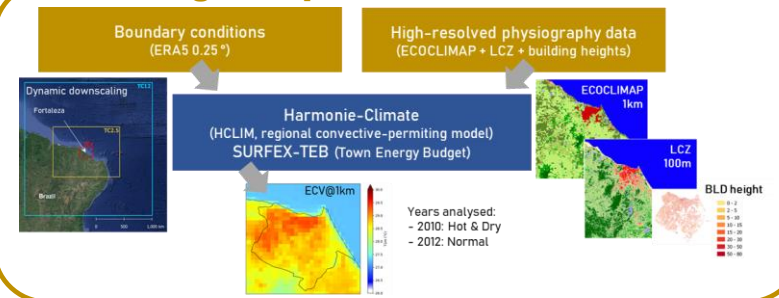


Motivation

- The temperature varies ~2°C during a year, while precipitation defines the 2 **seasons**: **rainy** (Jan-Jul) and **dry** (Aug-Dec) seasons.
- **Aim**: understanding the relationship of heat stress, climate and urban physiography, and provide rational information towards a more climate-sensitive urban planning in tropical cities.



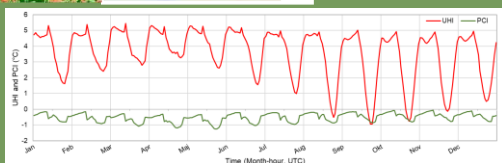
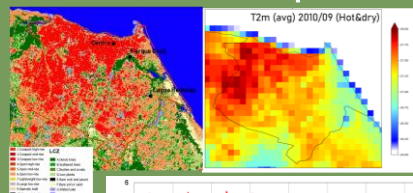
Modelling set-up



Results

Temperature vs urban fraction

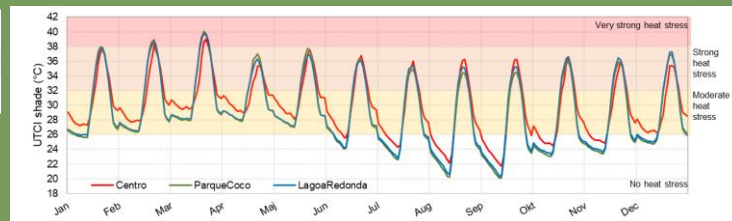
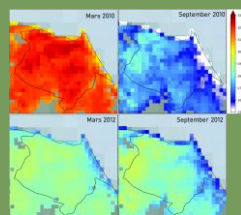
Warmer areas are those with more impervious surfaces and less urban planning (slums), where the most socio-economic vulnerable population live.



UHI (Urban - Rural):
[4.8; 5.4] °C (9:00 UTC)

PCI (Park-Urban):
[-1.2; -0.8] °C (21:00 UTC)

Universal Thermal Comfort Index (UTCI)



The rainy season is the least pleasant due to high RH levels. As the temperature variation during the year is small (max 2°C), the evapotranspiration during the day is strong from the sunrise (8:30 UTC) to zenith time (16:00 UTC) in the rainy period, leading to a UTCI rising in natural areas.

Message to take home

- High urbanization density is linked to higher thermal stress, affecting more where the most vulnerable population lives;
- Rainy season: UTCI can be higher at park and lake sites than in urban areas;
- The heat stress is stronger in the rainy season due to high humidity levels.

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