

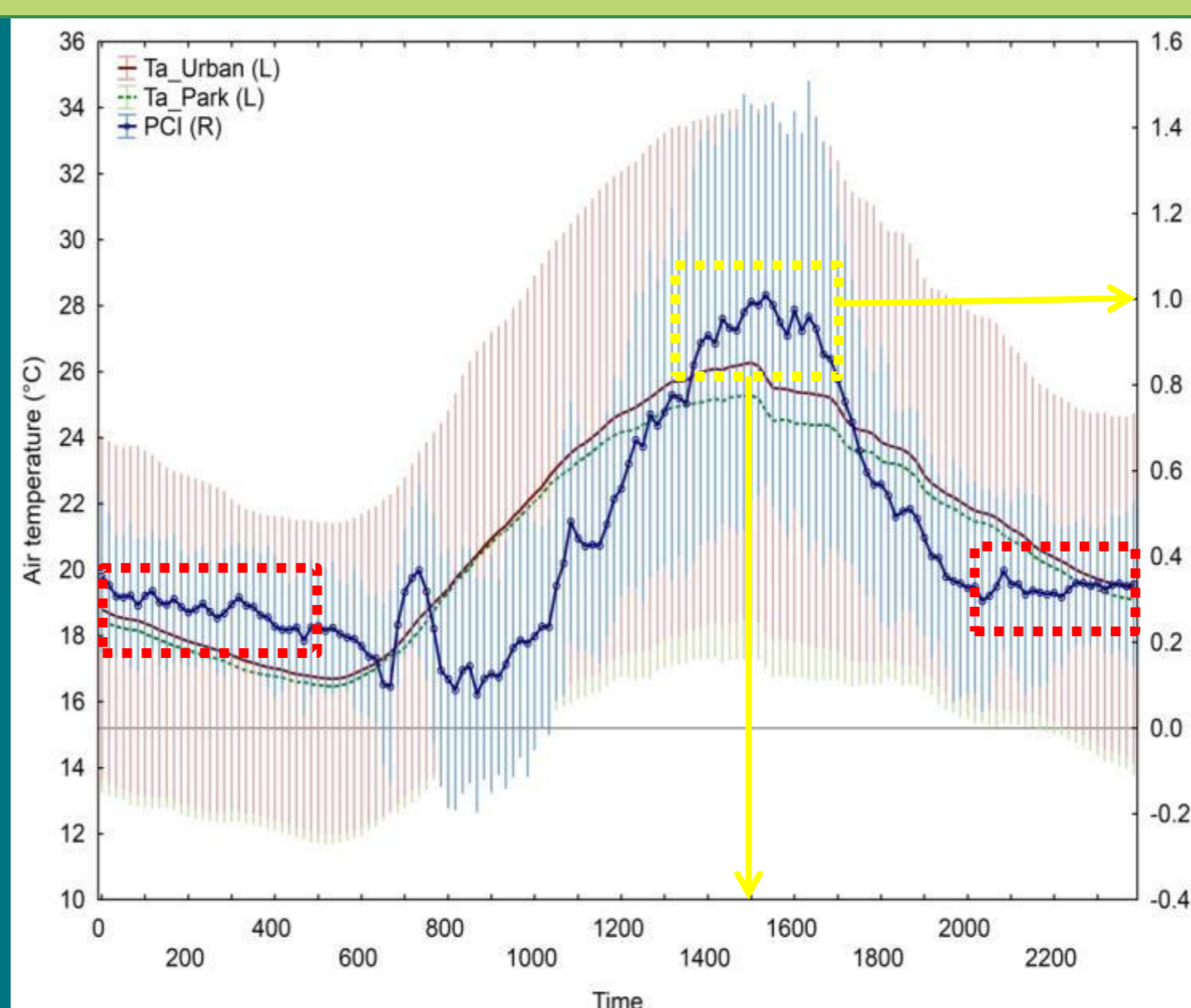


The Impact of Urban Green Spaces on Urban Climate during Heat Events: A Case Study on Urban Green Spaces in Melbourne

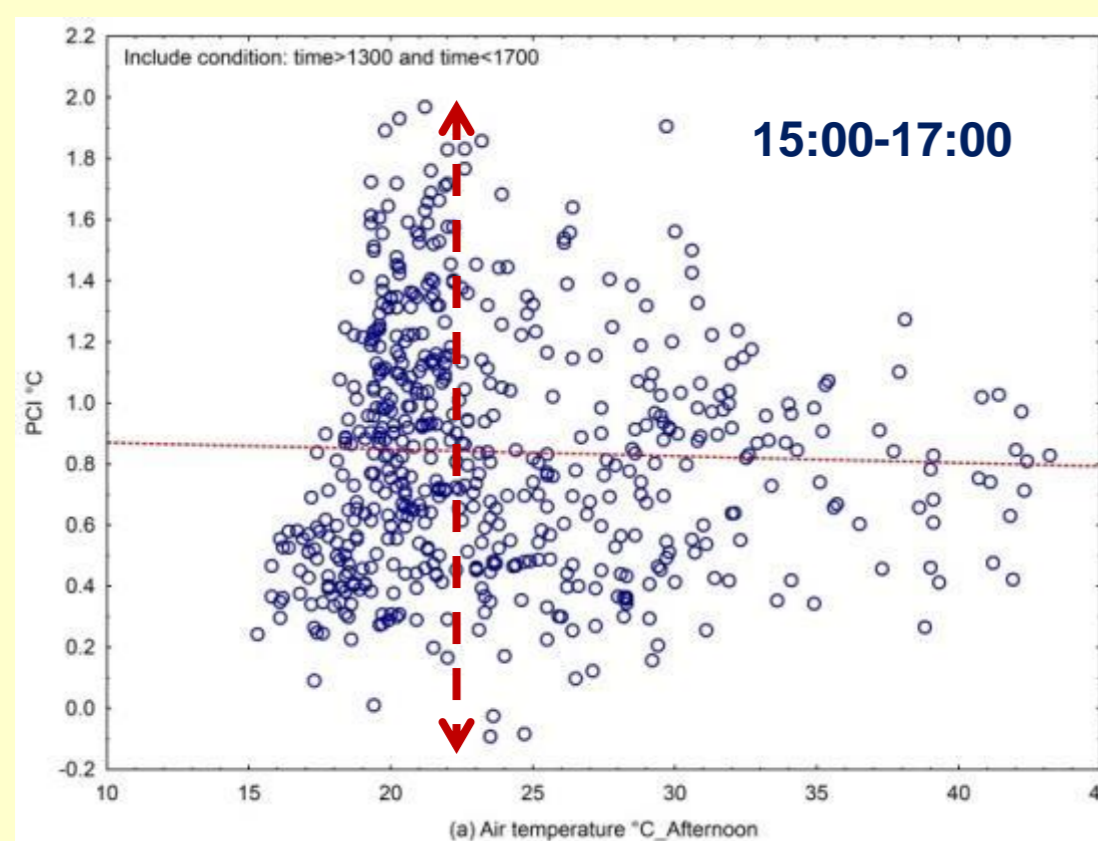
This study analyses the climatic and bio-climatic impact of a small urban park on its surrounding urban environment in lowering air temperatures and improving human thermal comfort in Melbourne, during summer time with extreme heat events.

On average...

- Park was always cooler than its surrounding urban environment!
- The Park Cool Island (PCI) was greatest during peak daytime heating reaching up to 1.0° C!
- The nocturnal PCI was lower than the diurnal PCI due to the park's night time irrigation.

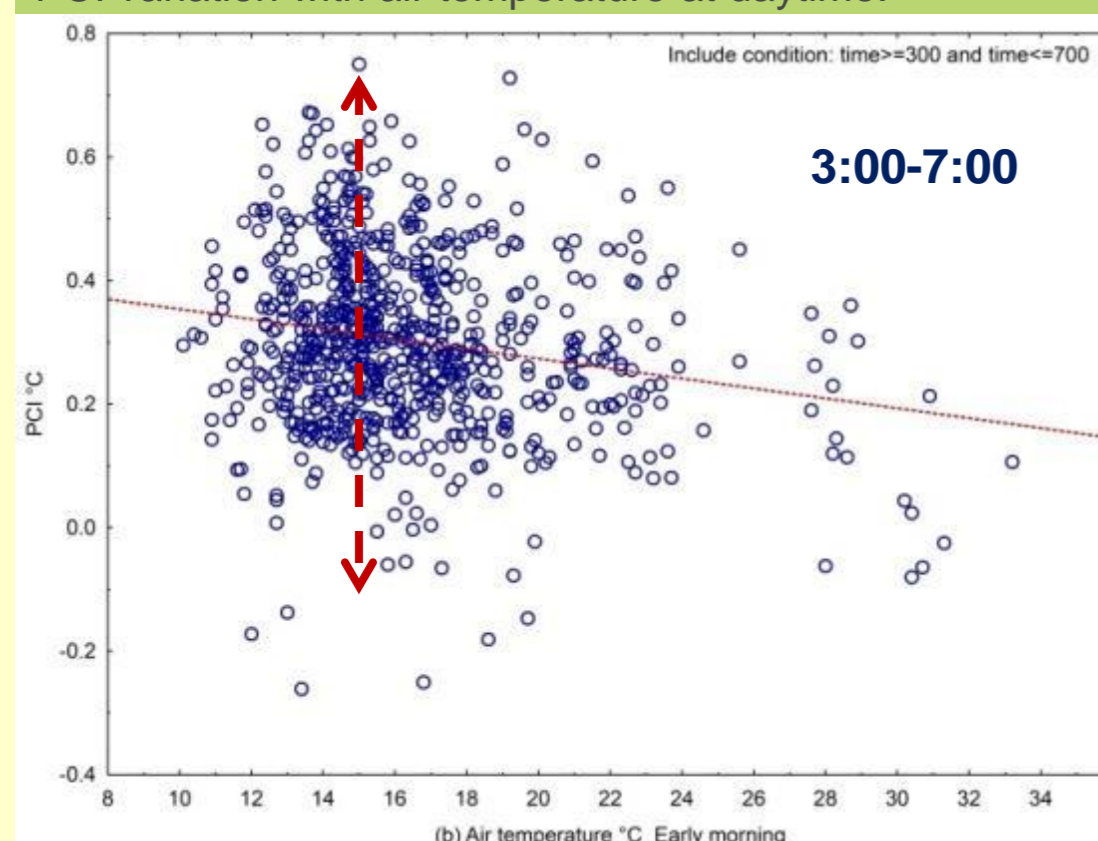


Monthly averaged air temperature in the park and the surrounding canyons.



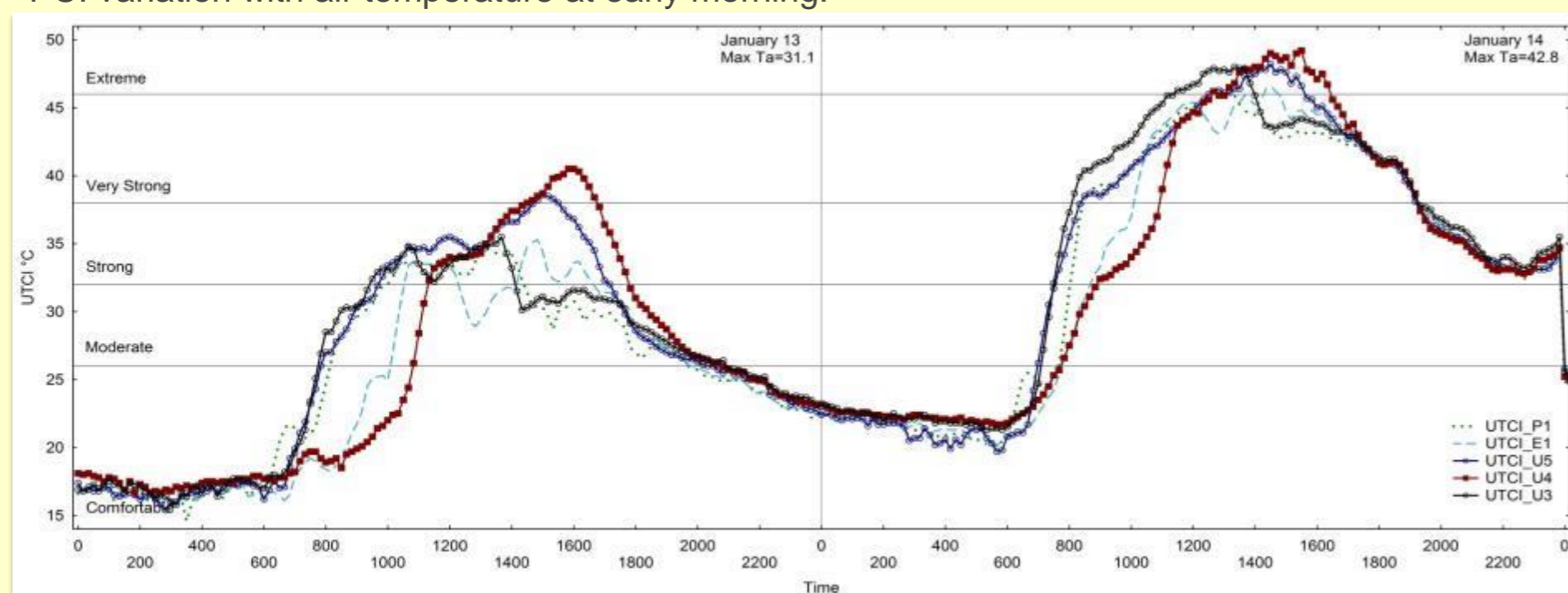
PCI diurnal variability depends on: meteorological conditions and the characteristics of the surrounding urban environment.

PCI variation with air temperature at daytime.

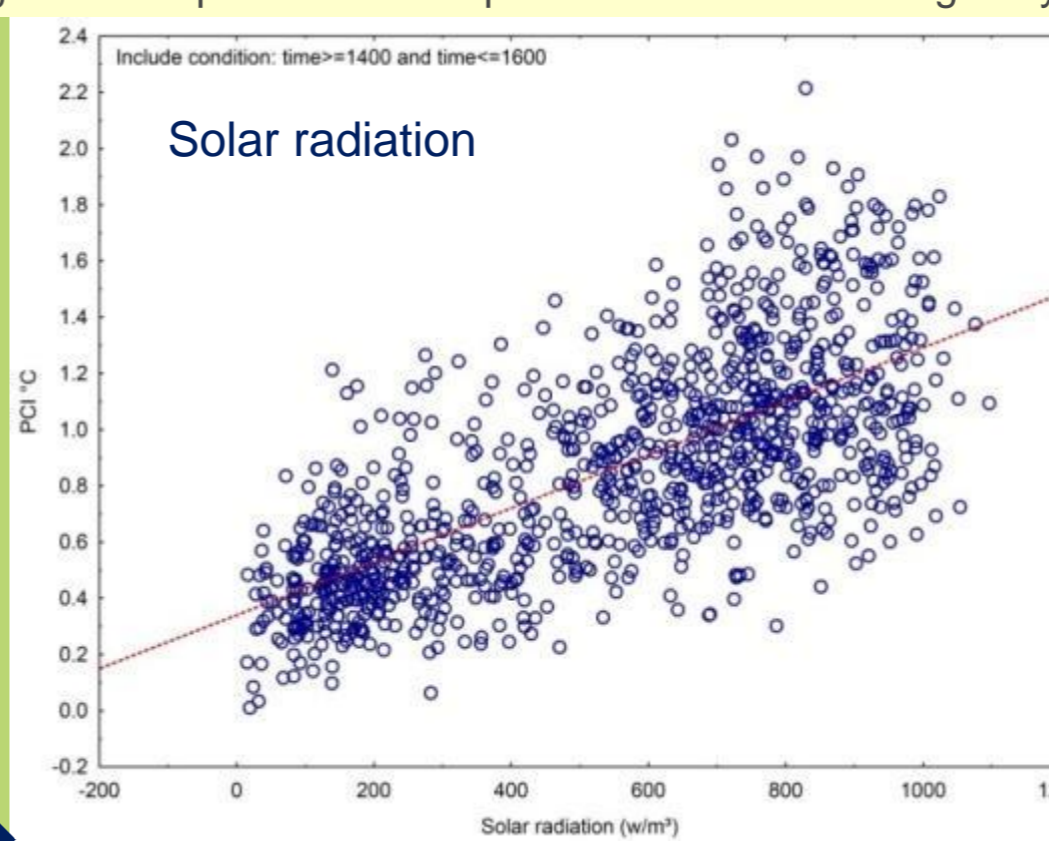


The nocturnal PCI variability is caused mainly by the land surface features.

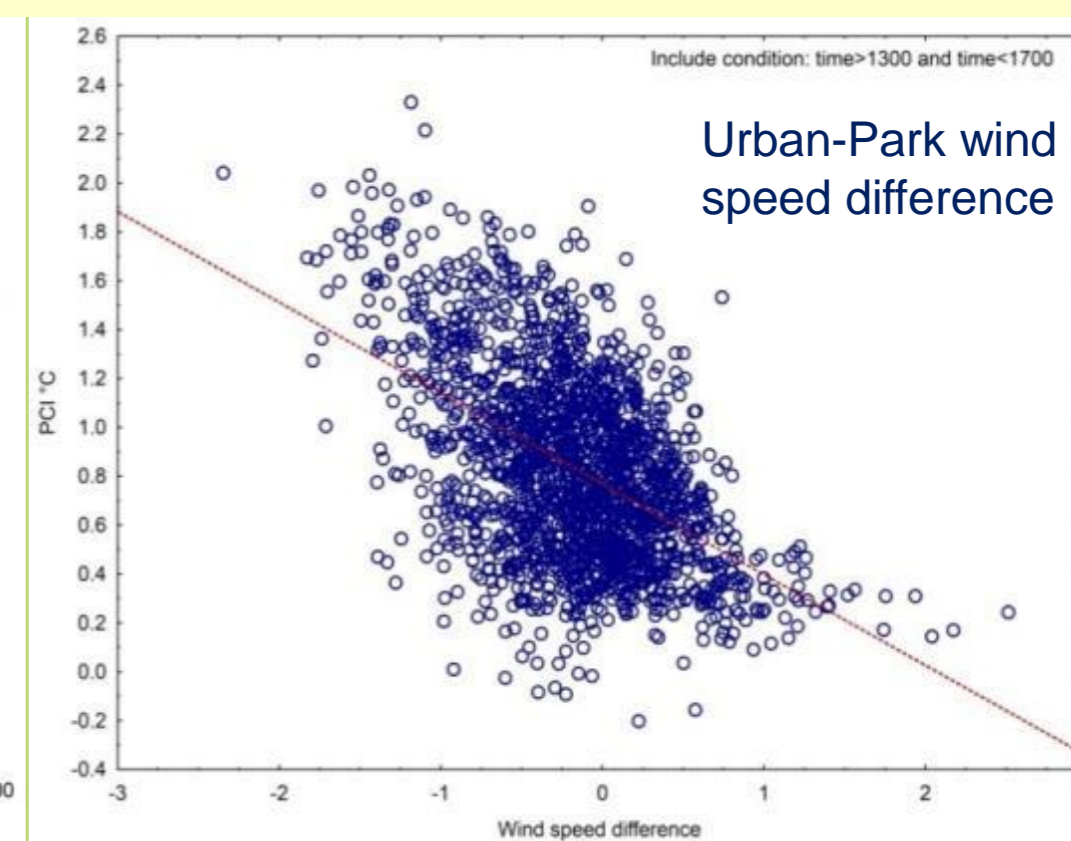
PCI variation with air temperature at early morning.



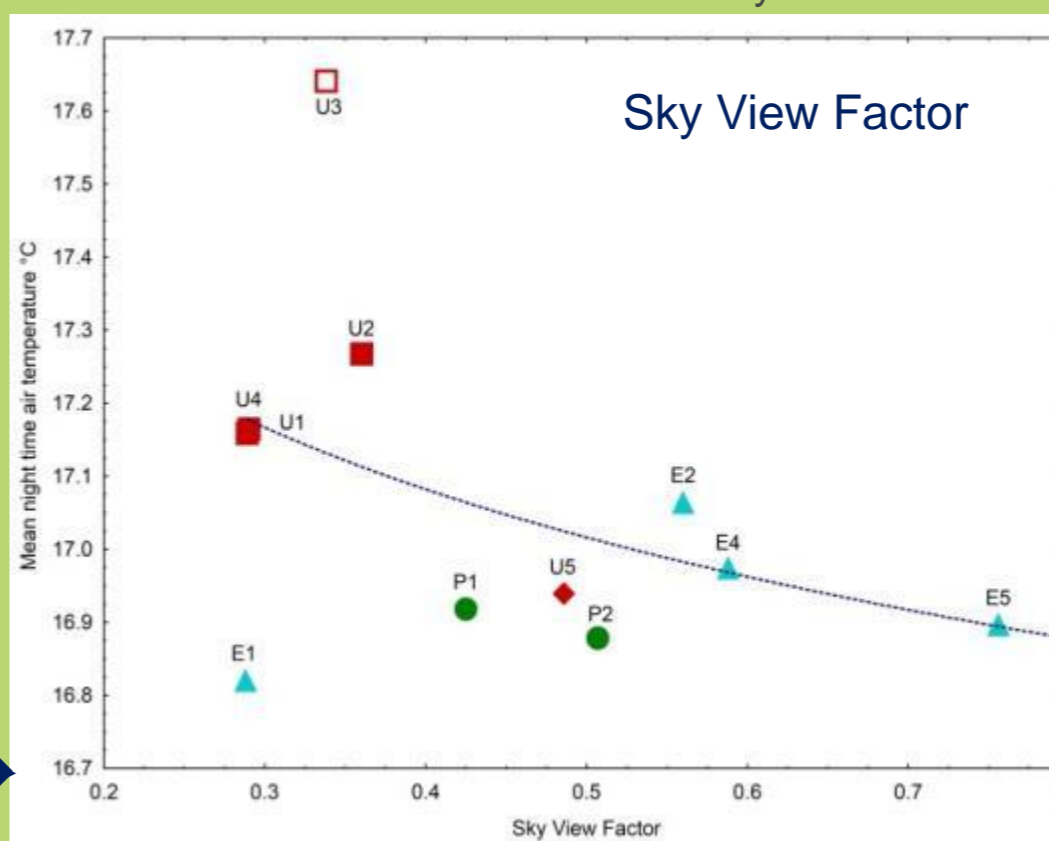
UTCI for two individual days when $T_a \geq 30^\circ\text{C}$, (a) 13th, and (b) a representative day when $T_a \geq 35^\circ\text{C}$.



PCI variation with solar radiation at daytime.



PCI variation with urban-park wind speed difference.



SVF influencing the nocturnal air temperature.



Study site. Ref: Google earth

During summer conditions and in peak daytime heating, trees' shading and evapotranspiration in the park could reduce the level of heat stress from **strong** in the nearby streets to **comfortable** in the park.