ppa\_2302工作笔记：

* 论文创新点：
  + 相对于传统的基于遥感的公园降温效应，本研究率先基于实测数据量化了公园降温效应
  + 关注湿度、热舒适度
* 重点文献：
  + LEVEL 1
    - 【2204\_230808】Large urban parks summertime cool and wet island intensity and its influencing factors in Beijing, China
    - 【2204\_230802】Influence of urban form on the cooling effect of a small urban river
    - 【2204\_230801】Influence of a large urban park on the local urban thermal environment
    - The urban-parkland nocturnal temperature interface
  + LEVEL 2
    - 【2204\_230809】Research on the relationship between urban morphology and air temperature based on mobile measurement: A case study in Wuhan, China
    - 【2204\_230803】Assessing the effects of landscape design parameters on intra-urban air temperature variability: The case of Beijing, China
    - 【2206\_230701】Summer thermal comfort of pedestrians in diverse urban settings: A mobile study
    - Do water bodies play an important role in the relationship between urban form and land surface temperature?
* 数据分析前相关问题
  + 缓冲区【up2024 0701 10:35】
    - Research on the relationship between urban morphology and air temperature based on mobile measurement: A case study in Wuhan, China：150米
    - Assessing the effects of landscape design parameters on intra-urban air temperature variability: The case of Beijing, China：150米
    - Large urban parks summertime cool and wet island intensity and its influencing factors in Beijing, China：50米 & 100米
    - Summer thermal comfort of pedestrians in diverse urban settings: A mobile study：250米
    - Influence of urban form on the cooling effect of a small urban river：未发现
    - Quantifying the nonlinear relationship between block morphology and the surrounding thermal environment using random forest method：200米
    - Impacts of land use/ land cover types on interactions between urban heat island effects and heat waves：150米
    - Influence of a large urban park on the local urban thermal environment：150米
    - Revealing the spatiotemporal characteristics and drivers of the block-scale thermal environment near a large river: Evidences from Shanghai, China：未发现
    - 总结：根据上述结果，本研究将缓冲区定为150米。
  + 停留时间【up2024 0701 10:35】
    - Applicability of mobile-measurement strategies to different periods: A field campaign in a precinct with a block park：最好接近10分钟，下午影响较小。
    - 然而，大多数以往研究尚未考虑这一因素：
      * Research on the relationship between urban morphology and air temperature based on mobile measurement: A case study in Wuhan, China
      * Effects of urban planning indicators on urban heat island: a case study of pocket parks in high-rise high-density environment
      * Influence of urban form on the cooling effect of a small urban river
  + 蓝绿降温渗透距离【up2024 0701 10:35】
    - Influence of urban form on the cooling effect of a small urban river：多小于100米
    - Influence of a large urban park on the local urban thermal environment：可大于1 km
    - The urban-parkland nocturnal temperature interface：几乎没有
    - Large urban parks summertime cool and wet island intensity and its influencing factors in Beijing, China：约200米内
    - Spatial-temporal pattern in the cooling effect of a large urban forest and the factors driving it（200-800米）
    - 总结：根据上述结果，本研究将公园降温渗透距离定为200+米
  + 上午/下午/晚上的降温强度【up2024 0701 10:35】
    - Impact of urban park’s tree, grass and waterbody on microclimate in hot summer days: A case study of Olympic Park in Beijing, China：上午、中午降温强于下午（上午接近2度，下午接近1度，针对有树的类型）
    - Effects of urban planning indicators on urban heat island: a case study of pocket parks in high-rise high-density environment：下午最强，晚上仍然有降温效应，但相对较弱（下午在1度以上，晚上在0.5度左右）
    - Large urban parks summertime cool and wet island intensity and its influencing factors in Beijing, China：夏季夜间比白天观察到更强的 PCII 和 PWII（[表 4](https://www.sciencedirect.com/science/article/pii/S1618866721004027?via=ihub" \l "tbl0020)）以及更显着的 Ta 和 Rh 差异（晚上1.5度左右，下午1度左右）
    - Spatial-temporal pattern in the cooling effect of a large urban forest and the factors driving it：夜间降温比白天明显（1.5-2度）
    - 总结：夜间降温强于白天
  + 湿度&舒适度状况【up2024 0701 10:35】
    - Impact of urban park’s tree, grass and waterbody on microclimate in hot summer days: A case study of Olympic Park in Beijing, China：虽然湿度增加，但舒适度指数仍下降
    - Large urban parks summertime cool and wet island intensity and its influencing factors in Beijing, China（夜间可下降10%，白天下降在3%以内）
    - 总结：虽然湿度增加，但舒适度指数仍下降
  + 影响因素【up2024 0701 10:35】
    - Large urban parks summertime cool and wet island intensity and its influencing factors in Beijing, China：与公园距离、植被覆盖比、不透水面覆盖比、LSI
    - Influence of urban form on the cooling effect of a small urban river：街道宽度、街道高宽比
    - 平均建筑高度、FAR
    - 关于3D建筑指标的影响，参考：
      * The roles of surrounding 2D/3D landscapes in park cooling effect: Analysis from extreme hot and normal weather perspectives：建筑密度影响较大，AI、LSI、土地覆盖组成的影响也较大
      * Quantifying the cool island effects of urban green spaces using remote sensing Data
    - 关于其它影响，参考：
      * How can urban parks be planned to maximize cooling effect in hot extremes? Linking maximum and accumulative perspectives
      * Influence of a large urban park on the local urban thermal environment：土地覆盖组成
      * The relationship between spatial configuration of urban parks and neighbourhood cooling in a humid subtropical city
      * Analysis of the spillover characteristics of cooling effect in an urban park: A case study in Zhengzhou city
      * Cooling effects of wetland parks in hot and humid areas based on remote sensing images and local climate zone scheme
  + 测量时长
    - Influence of urban form on the cooling effect of a small urban river：4天
    - Influence of a large urban park on the local urban thermal environment：1天
  + 其它补充
    - 风向、风速影响降温距离
  + 图表1【放弃】
    - 气温/RH/热舒适度指数空间格局（上午/下午/晚上）
    - 统计方法1：多元回归
      * 各站点气温VS与公园距离的散点图（上午/下午/晚上）
      * 各站点相对湿度VS与公园距离的散点图（上午/下午/晚上）
      * 各站点热舒适指数VS与公园距离的散点图（上午/下午/晚上）
      * 多元回归结果（气温、相对湿度、热舒适指数）
    - 统计方法2：随机森林
    - 冷岛/湿岛/舒适缓解岛的强度/范围的箱线图（上午/下午/晚上）
    - 冷岛/湿岛/舒适缓解岛的影响因素分析（上午/下午/晚上）
    - 气温VS LST
    - 可选
      * 高温日 VS 正常夏日
  + 图表2
    - 气象指标的空间格局（按日平均，上下晚，TA/RH/TC）
    - 每隔100米的气象指标 VS 影响因素-散点图
      * 说明：
        + 上下晚，TA/RH/TC，所有日，days together，streets together (result 6)
        + 上下晚，TA/RH/TC，所有日，days together，each street(result 5)
        + 上下晚，TA/RH/TC，所有日，each day，each street(result 1)
      * 影响因素：与公园距离、植被覆盖比、不透水面覆盖比、街道宽度、高宽比
    - 多元回归
    - RCE指标（得到6日的箱线图for 6条路线，上下晚，TA/RH/TC）
    - RCE指标与影响因素（可能是简单箱线图）
    - 补充
      * 气温与LST
      * 热浪影响
* 热舒适指数
  + 分析球温、风速数据
  + 学习Rayman
  + 参考Influence of view factors on intra-urban air temperature and thermal comfort variability in a temperate city：利用Rayman，基于MRT等指标计算PET
  + Variations in outdoor thermal comfort in an urban park in the hot-summer and cold-winter region of China
* 步骤：
  + 已完成
    - 固定点调为公园内多点平均
    - 热舒适指数优化
    - 调整数据空间分辨率
    - 筛选日期、道路
  + 过一遍
  + Adjust data -气象指标 & RCE相关【-0722】
    - 晚上-TP
    - 晚上-RH/TC
    - 上午/下午-RH/TC
  + 气温与LST【-0726】
  + 同步进行
    - 画图代码调整
    - 相关研究总结补充
  + 可选
    - Rayman运行时，经纬度调整
    - 热浪影响
    - 视觉指数（参考周宏轩文章）
    - 时间影响因素
    - 移除路线3末段的数据
  + 代码最后整理