# 引言

**环境公平性(Environmental Justice)**研究环境资源在不同群体间的分配结果是否存在差异,主要关注环境利益与环境风险在不同种族之间的不平等配置问题[1].随着我国社会经济发展,不同收入人群的环境福祉分配差异日渐显著,环境公平性问题突出[2][3][4].我国城市发展历史特殊、城市人口密集、城市化进程迅速,这三大特征使得人群获取城市生态系统服务效益的差异成为环境公平性研究的重要方面[5].因此，研究城市环境公平性对于缩小不同人群中环境资源配置不均衡性具有重要意义。

**城市生态系统服务**是指城市生态系统及其组份维系与支持人类生活的条件与过程[6]. 主要包括城市公园、居民花园、绿色屋顶、水体与行道树等城市绿色空间(Urban Green Spaces, UGSs)[7]提供的缓解气候压力,休憩娱乐等环境效益[8]。**近年来**，**城市生态系统服务概念框架已被广泛应用于环境公平性研究中。**研究表明，城市或村镇中低收入地区的人群获取城市生态系统服务的机会相对少[21][22][23][24][25]. 富裕地区如澳大利亚阿德莱德地区的居民获取城市生态系统服务的可能性约为其相邻欠发达地区的两倍[21].城市生态系统服务的主要效益常常被白人或富裕群体获得,且在不同年龄段,性别的人群中差异较大[22]. 不同人群对于生态系统服务可达性的差异已成为环境公平性研究关注的重点[8][27]. 以上研究为我们从生态系统服务视角理解城市环境公平性问题提供了重要基础。

然而，目前基于生态系统服务的环境公平性研究大多集中于分析生态系统服务供给，而对于生态系统服务需求考虑较少。**生态系统服务供给与需求**分别对应生态系统基于其生物物理特性提供服务的潜力以及社会对于某种生态系统服务的供给在数量与质量上的需求[13].评估生态系统服务供需在空间上的匹配程度,探索其空间分布特点,也是揭示环境公平性分配的重要方面[18].此外,相关研究大多来自于美国、英国和澳大利亚,针对我国国情的研究相对较少.中国在改造城市绿地方面的经验可以为全球北方(gobal north)的城市提供重要的借鉴[8].上海作为我国经济中心之一,城市建设水平领先,评估其生态系统服务供需匹配,探索城市生态系统布局模式,对其他城市生态系统服务规划具有重要意义[39]。

综上所述,本文针对上海市文化生态系统服务供需,结合遥感影像与社会经济数据,评估上海市文化生态系统服务供给能力与需求潜力;利用空间叠加分析等地理信息技术完成上海市文化生态系统服务制图,揭示其空间匹配现状,探索环境公平视角下,城市文化生态系统服务的规划现状,展望未来发展模式.

# 问题总结

* 本研究的空间尺度能达到什么程度:以街道为基本统计单元?栅格数据分辨率?
* 文献[29]已经做过上海类似的研究,我们的创新和改进能从哪些方面去考虑?(以内环外环作为市区与郊区的分界,改进简单单一中心城区为市区的划分方式?加入不同年龄段人群的需求分析,针对老龄化现状?)
* 依据什么标准,选择文化生态系统服务供给和需求的评价指标?能否考虑市区/郊区的差异?距离市中心的梯度?

**研究方法：**

1. 研究区介绍
2. 文化生态系统服务供给制图

(Baro et al. 2016, Bing et al. 2021)

1. 文化生态系统服务需求制图

(Baro et al. 2016)

1. 文化生态系统服务供给与需求空间匹配度分析

(Herreros-Cantis and McPhearson 2021)

1. 不同人群中文化生态系统服务供需匹配度比较

(Herreros-Cantis and McPhearson 2021)

**研究结果：**

1. **文化服务空间匹配性**
2. **基于文化服务供需不平衡的环境公平性**

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