**City-level household energy consumption and a clustered typology in China: A machine learning based approach**

Yixuan ZHANGa, Yifan Lib, Xi LIANGc, Yi WUc,\*

**Abstract**

**Keywords**: household energy consumption, clustering approach, urban-rural divide, household typology

# 1. Introduction small chicken

- [ ] Cities account for a majority of emissions & household energy/lifestyle emissions

- [ ] Understanding of Chinese cities' emission and HCEs

- [ ] What approaches have been applied to explore HCEs and what findings regarding urban/rural HCEs

- [ ] What gap exists in the current researches? -- highly dependent on a fixed range of factors, and lack of deep understanding of lifestyle and behaviors of Households

# 2. Methods and Data Description

## 2.1 Survey samples and city-level data - YW & ZYX

## 2.2 Energy consumption and emission data processing - YW

## 2.3 Machine learning approaches - ZYX

# 3. Results

## 3.1 Inter-city and regional disparity

## 3.2 HCE inequality by regions - YW & ZYX

## 3.3 A machine learning-based HCE typology - ZYX

# 4. Discussion

# References