**Student name:**

**Student matriculation number:**

**Title of the selected paper**: “The mortality and medical costs of air pollution: Evidence from changes in wind direction”

**Citation:** Deryugina, T., Heutel, G., Miller, N.H., Molitor, D. and Reif, J., 2019. The mortality and medical costs of air pollution: Evidence from changes in wind direction. *American Economic Review*, *109*(12), pp.4178-4219.

**Abstract:** We estimate the causal effects of acute fine particulate matter exposure on mortality, health care use, and medical costs among the US elderly using Medicare data. We instrument for air pollution using changes in local wind direction and develop a new approach that uses machine learning to estimate the life-years lost due to pollution exposure. Finally, we characterize treatment effect heterogeneity using both life expectancy and generic machine learning inference. Both approaches find that mortality effects are concentrated in about 25 percent of the elderly population.

**Empirical methodology used:** Instrumental variables, panel data, fixed effects

**Data:**

1. **Datasets:** 1) Air pollution; 2) Atmospheric conditions; 3) Mortality, morbidity, and medical costs
2. **Horizon:** (from … till…)
3. **Frequency:** daily
4. **Source:** (for each dataset, what is the source where the data could be accessed from?)
5. **Availability:** (for each dataset, is everything available and directly downloadable?)

**Coding:**

1. Does the paper provide the codes? In which programming language?
2. Which programming language will you be using?