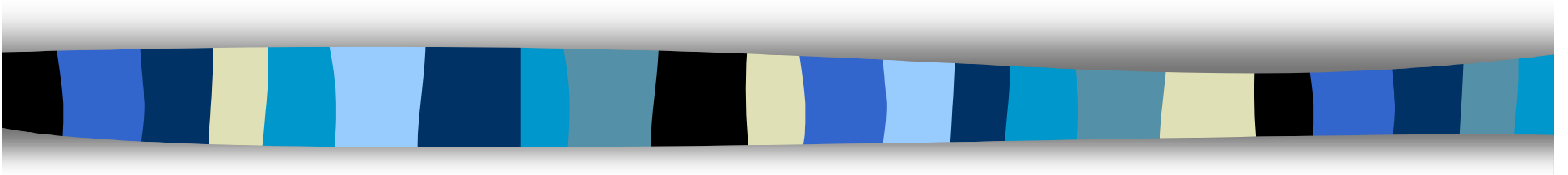# Palookaville

The synthetic data generation
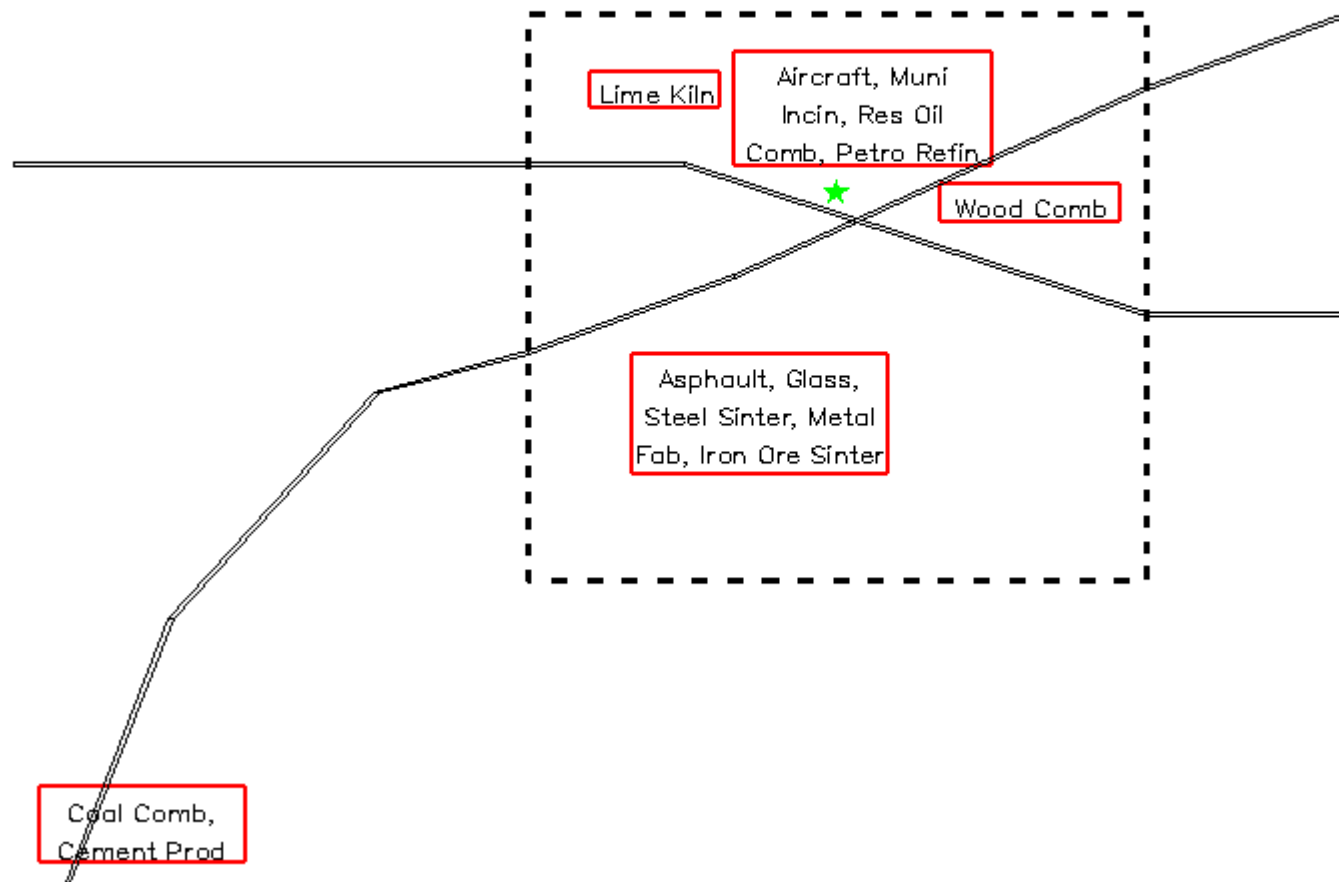
Basil Coutant

Overview

- ISC3ST Dispersion model
- 1984, DC Meteorological data
- city layout
  - point sources (stacks and industrial complexes)
  - area sources (all with the same profile)
  - roadways

View of Point Sources, Industrial Complexes, and Highways in Palookaville

Lime Kiln

Aircraft, Muni
Incin, Res Oil
Comb, Petro Refin.

Wood Comb

Asphault, Glass,
Steel Sinter, Metal
Fab, Iron Ore Sinter

Coal Comb,
Cement Prod

Source profiles used

- Lime Kiln,
- Wood combustion,
- Coal combustion, ***
- Glass Furnace,
- Metal fabrication,
- Iron ore dust,
- Municipal incinerator,
- Residual oil comb.,
- Petroleum Refinery. *

- Cement products,
- Asphalt roofing,
- Steel sinter,
- Jet fuel.

2 roads (DRI + road dust)

1 area profile (= a mix of dust and roads)

Source Characteristics

- Log-normal variations in strength,
  - 50% CV for most
  - 5 of the 9 stacks are seasonal
  - 2 others have weekly variations
  - roads have weekly + holidays
  - the above variations are on top of the variation induced by the met data.

Average source strengths

- 28 Area,
- 25.5 interior roads,
- 5.4 Stack 8 (Residual oil combustion),
- 1.5 Stack 3 (Coal combustion),
- ~1 each Steel sinter & Jet fuel.
- <1 for all the rest.

Average source contributions