**INTRODUCTION**

- The considerable increase in traffic and travel times has caused a corresponding increase in the use of two stroke moped (Figure 1).
- The use of these non-regulated engines might have serious implications for emissions of particulate pollutants, as well as higher total emission of organic gases [1][6].
- Emissions from two stroke engine was studied in an emissions laboratory at the local conditions of a high altitude city such as Bogotá (Colombia), with the focus on the dilution temperature dependence of particle number.
- A data inversion algorithm was developed and applied for the Dekati DMM-230 instrument data.

**RESULTS**

- A two-stage ejection dilution system was used (Fig. 2) to treat the sample aerosol.
- The diluted sample was then measured with an electric, low-pressure impactor (Dekati, DMM-230), following the measurement schedule shown in Figure 3.
- In order to explore the impact of sampling temperature on the distribution of PM, several experiments were performed without heating the dilution air.

**CONCLUDING REMARKS**

- Mass and number emission rates were measured for a two-stroke, 48cc, oil-gas mixed fuel engine.
- Particle number emission rates ranging from 3x10^4 8/4g fuel to 3x10^5 8/4g fuel were found in this study. Particle emission rate estimates were one order of magnitude higher when heated dilution air was used.
- The size distribution was shifted towards 30 to 50 nm sized particles. The increase in particle number emissions can only be partially explained due to this shift in the size distribution.
- Unlike number emission rate estimates, mass emission rates were not strongly impacted by diluted air temperature.

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