**TRIP BASED MODELING OF FUEL CONSUMPTION IN MODERN FLEET VEHICLES**

**PROBLEM STATEMENT:**

* A new asymmetric twin-scroll turbocharged engine with two [EGR](https://www.sciencedirect.com/topics/engineering/exhaust-gas-recirculation) circuits is first presented.
* Experiment and simulation are combined on the [diesel engine](https://www.sciencedirect.com/topics/engineering/diesel-engine) with asymmetric [turbocharger](https://www.sciencedirect.com/topics/engineering/turbocharger).
* Effect laws of [turbine](https://www.sciencedirect.com/topics/engineering/turbines) critical parameters and EGR valves control strategy are explored.
* The new system has the maximum EGR rate and fuel economy improvements of 8.59% and 1.98%.
* The research collects bus fuel consumption data for diesel buses.
* Models are developed to compute the fuel consumption levels of buses.
* The optimum bus fuel economy cruising speeds range between 40 and 50 km/h.
* The model is more consistent with empirical observations compared to the MOVES and CMEM models.

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