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Abstract

In urban, and frequently in suburban, traffic conditions the engine power demand is weak and the turbocharger runs at low speed. As this functioning often happens for the automotive engine, performances of turbocharger at low speed are to be well-known to study and improve engine behaviour. Methods generally used to set turbocharger performances are depicted and the reasons why the usual procedure cannot be used at low speed are explained.

It appears that knowledge of mechanical efficiency is a key to improve knowledge on turbocharger performances, especially at low speed. That is why friction losses have to be well identified.

General and exclusive experimental methods are described and discussed. Studies conducted in our laboratory are presented; work done on evaluation of friction losses is outline.