

The 12-cylinder camless engine breathing process will be modeled with artificial neural networks (ANN's). The inputs to the net are the intake valve lift (IVL) and intake valve closing timing (IVC) whereas the output of the net is the cylinder air charge (CAC). In camless engine a control system should be designed to track desired cylinder air charge as demanded by the driver and thus satisfy torque requirement. For efficient engine performance the pumping loss (PL) must be minimized while tracking the cylinder air charge. Towards this end, the pumping loss as a function of the intake valve lift and intake valve closing timing is modeled with the aid of the neural networks. The developed neural net model predicts the cylinder air charge and pumping loss well and can be used for camless engine control design.