Abstract

Wind tunnels are being used to study the aerodynamic properties of race cars, fighter planes etc. It allows us to make a reusable prototype and test it in the tunnel. Hypersonic wind tunnels operate at hypersonic speeds ie, with a mach number greater than 6. For doing experiments, it is necessary to maintain a constant pressure in the settling chamber of the tunnel so that we get the desired Mach number and mass flow rate through the nozzle. Here, a fuzzy assisted PI control system incorporating anti reset wind up is developed for regulating the pressure and hence a constant mass flow rate in the hypersonic intermittent blow down type wind tunnel and the results obtained are analysed.
Index Terms

Computer Science
Artificial Intelligence

Key words
Hypersonic wind tunnel
anti reset windup
fuzzy assisted PI controller