

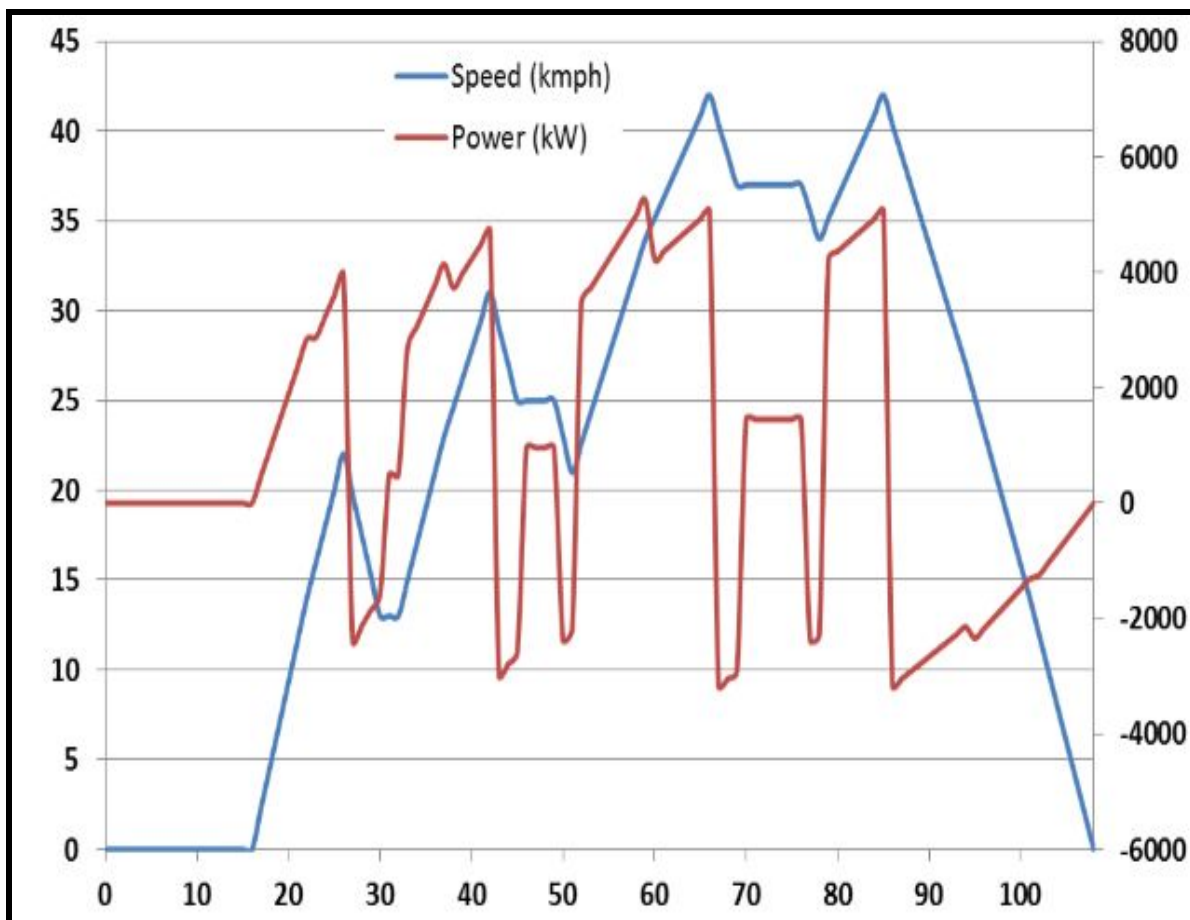
Pulsar Makerthon

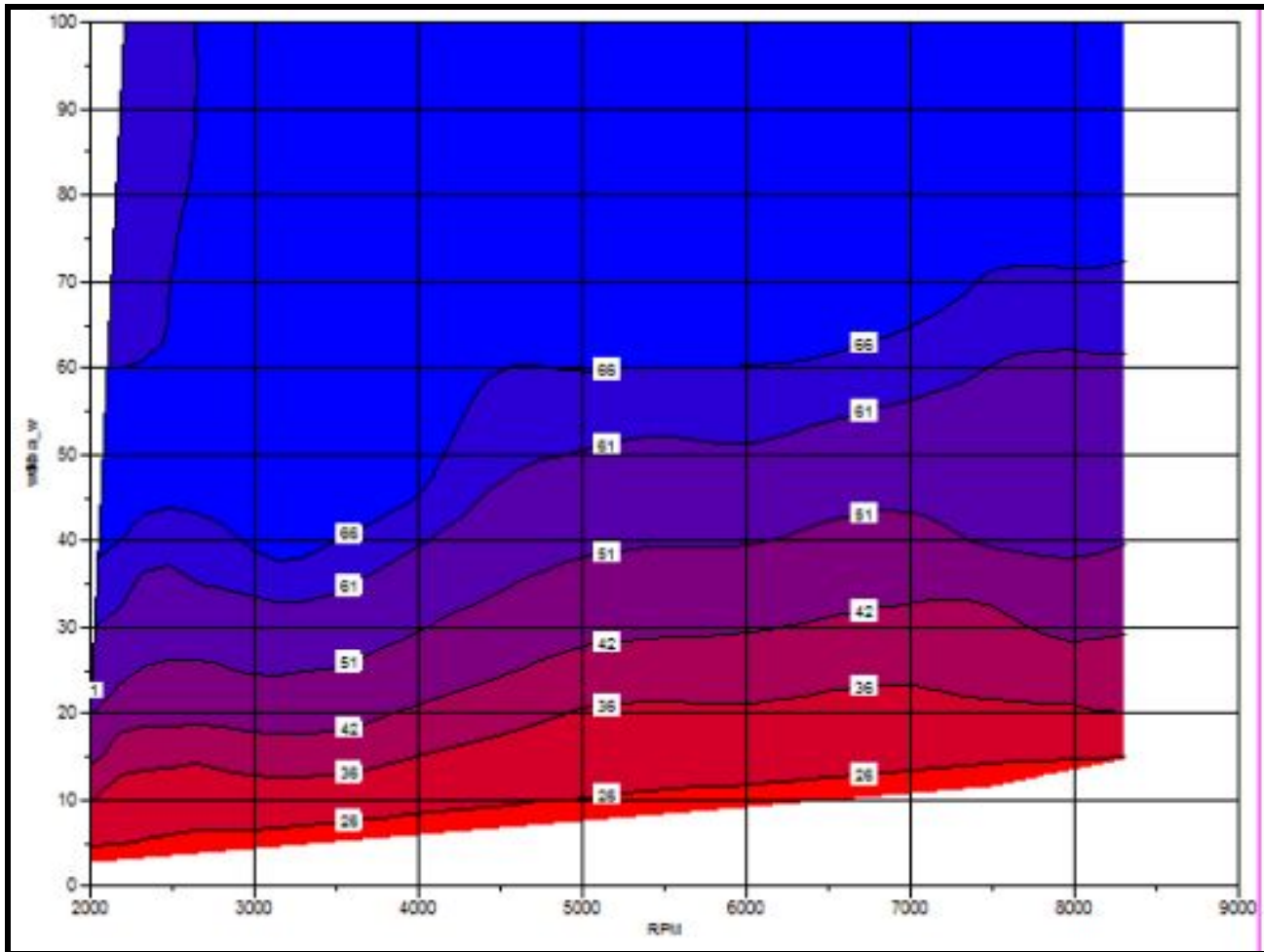
AIM

Design a Robotic Arm to modulate the throttle of the 2 wheeler (e.g Pulsar) to follow the programmed speed of the Test Cycle.

PROBLEM DESCRIPTION

- 1) The control strategy for the above problem statement is dependent on the engine character, the vehicle drag losses as well as the brake characteristics of the vehicle(eg. Pulsar).
- 2) From the graphs below we can see the variation of the vehicle power requirement for traversing an IDC cycle. This power requirement has to be read in line with the engine characteristics shown in the adjacent figure.
- 3) The control strategy of the robotic arm must vary the throttle in a manner so as to account for the non linearities in both the graphs.





STRUCTURE

There will be 2 stages:

Stage 1 - Submission of an abstract with detailed functional description of the solution including the proposed design.

Stage 2 - Selected teams will move to Stage 2. Here the proposed solution needs to be developed and prepared for final demonstration. Teams would be invited to Techfest, IIT Bombay which is from 3rd-5th January 2020. Here, the final design will be demonstrated to a panel of judges.

TIMELINE

5th December - Last date for submission of Proposed Design

10th December - Results and Shortlisting of teams for Final on the basis of

3rd-5th January - Grand Finale and presentation of complete design

REGISTRATION

The Participants have to register on the official Techfest Website and fill all the necessary details:

www.techfest.org > Competitions > Pulsar Makerthon > Register > Create/Join a team

ABSTRACT SUBMISSION

Teams will be required to submit one report to makerthon@techfest.org. This report should contain the idea they are looking forward to work on and the technical specifications to develop it.

Submission Format- The abstract should be emailed to makerthon@techfest.org with the subject:

Pulsar Makerthon Abstract: Team Id (For example: Pulsar Makerthon Abstract: XY-199983)

The abstract must be submitted in pdf format only

GENERAL RULES

1. Every team has to register online on official Techfest website for the competition.
2. A Team ID will be allocated to the team on registration which shall be used for future references.
3. A team can register at any point of time before deadline and submit final abstract
4. The decision of the organizers or judges shall be treated as final and binding on all.
5. No responsibility will be held by Techfest, IIT Bombay for any late, lost or misdirected entries.
6. The idea presented by the teams should be original (not protected by means of patent/copyright/technical publication by anyone).
7. Note that at any point of time the latest information will be that which is on the website. However, registered participants will be informed through mail about any changes.

TEAM SPECIFICATIONS and ELIGIBILITY

- All students with a valid identity card of their respective educational institutions are eligible to participate in the competition
- One team can have a maximum of 3 members.
- Students from different institutes can be a part of the same team.

CERTIFICATE POLICY and PRIZES

- The Prize money will be awarded to Top 3 Winners via NEFT and will be processed within 30 working days.
- Top three teams in the grand finale will be awarded Certificate of Excellence.
- E-Certificate of participation will be given to the remaining teams selected for finale.

The Winners will have to mail the following information (immediately after announcement of results) to

vibhav@techfest.org

Subject: Pulsar Makerthon , team id- your position (example- Pulsar Makerthon , XY-199992 – 1st position)

Body of mail-

1. Account Holder's Name
2. Account Number
3. Bank name and Branch name.
4. IFSC Code