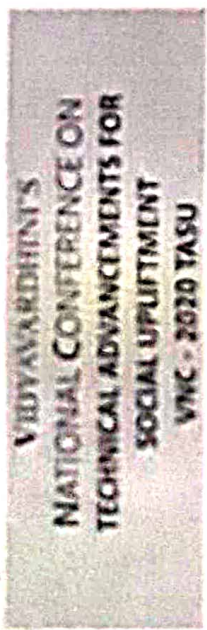



Registration Form



Name: _____
 Email ID: _____
 Title of paper: _____
 Registration Category: _____
 Mailing Address: _____
 Contact No: _____
 Payment Details: Net Banking
 Amount to Rs.: _____

Date: _____
 Signature of Participant

MEAD
 Dept. of Mechanical Engg.
 Vidyavardhini's College of
 Engineering & Technology
 V. Kulkarni Marg, Vasai (W)

Account Name: Vidyavardhini's College of
 Engineering and Technology
 Bank Name: Union Bank of India
 Branch: Vidyavardhini College Branch, Vasai Rd (W)
 Account Number: 22000145000000000000
 IFSC: UBIN0222008
 MICR: 400015103

Chief Patron
 Shree Vijay Vantak, President, Vidyavardhini

Patrons
 Shree Anon Vantak, Chairman, Vidyavardhini
 Shree Dhantaram Jadhav, Vice President, Vidyavardhini
 Shree Pradnyum Naga, Vice President, Vidyavardhini
 Shree P. D. Kulkarni, Vice President, Vidyavardhini
 Shree Vasanthakumhar Shrivastava, Treasurer, Vidyavardhini
 Shree Uditra Chavhan, Secretary, Vidyavardhini
 Shree Shrawanesh Mahesh, Secretary, Vidyavardhini

Honorary Conference Chair
 Dr. Harish Vankudre, Principal

Conference Chair
 Dr. Vikas Gupta, Dean, Academics
 HOD, Electronics and Telecommunication Engg.

TPC Co-Chair
 Dr. Uday Navalkar - HOD, Mechanical Engg.
 Dr. Deepak Gawli - HOD, Instrumentation Engg.
 Dr. Megha Inayat - HOD, Computer Engg.
 Dr. Adish Verma - HOD, Information Technology
 Dr. Sunil Kulkarni - HOD, Civil Engg.

Publication Chair Dr. Anish Chaudhari
Finance Chair Dr. Anvita Rupareta
Publicity Chair Mrs. Kamthan Sarmahar
Web Administration Chair Mr. Yogesh Pingla

National Advisory Committee
 Dr. M. N. Mook Director BVICAM, New Delhi
 Dr. Vishal Jain, BVICAM, New Delhi
 Dr. Sunesh K. Ukarende, Associate Dean,
 Faculty of Science and Technology, University of Mumbai
 Dr. J. W. Bhalal, President, IETE, New Delhi
 Prof. Kiran Talele, IEEE, Mumbai Section
 Mr. Pramod Lakshmi Fegade, Manager L&T Ltd, Mumbai
 Dr. Katarin Kalecha, Director Synthesis Institute of Technology, Pune
 Dr. Mukesh Patil, Principal, RAJIT, Mumbai
 Dr. Arvind Nema, IIT Delhi
 Dr. G. N. Jadhav, Earth Sci. Dept. IIT Bombay
 Prof. Dr. P. P. Date, IIT Bombay
 Dr. V. R. Kulkarni, VNT Nagpur
 Dr. Tansen Chaudhari, CEO, M/s Fluid Controls Pvt. Ltd, Mumbai
 Prof. P. Pabmanathan, VIT, Vellore
 Dr. D. G. Thakur, Defence Institute of Advance Technology, Pune
 Dr. V. B. Tungikar, SGGGS IEAT, Nanded
 Dr. Sandu Garg, Birla Vidyapeeth University College of Engg., Pune
 Mr. Vikram Murthy, Director, Umvac Environment Systems Pvt. Ltd,
 National President, ISHRAE

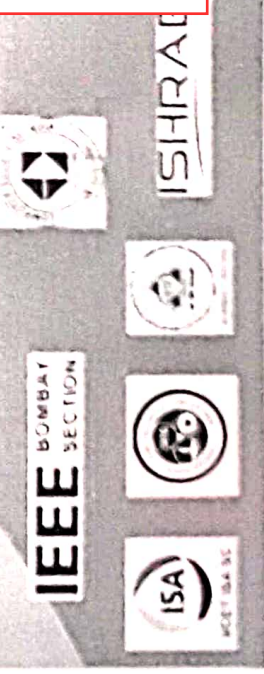
**VIDYAVARDHINI'S
 NATIONAL CONFERENCE ON
 TECHNICAL ADVANCEMENTS FOR
 SOCIAL UPLIFTMENT
 VNC - 2020 TASU
 4th APRIL, 2020**



Organized by:
**Vidyavardhini's College of
 Engineering & Technology**
 K. T. Marg, Vasai (W) - 401202
 Affiliated to University of Mumbai
 Approved by AICTE
 Accredited by NAAC

In Association With:
**BJIT - BVICAM's International Journal of Information
 Technology**. BJIT is now indexed at DBLP, INSPEC
 & UGC - CARE List. ISSN: 2511-2104 (Print Version)
 ISSN: 2511-2112 (Electronic Version)
**IJERT - International Journal of Engineering
 Research & Technology** ISSN: 2278-0181
Conference Website: www.vce.ac.in/vnc2020

Technically Sponsored By:



VNC - 2020 TASU

About us:

Vidyavardhini means a Body committed to enhancement of Knowledge. Vidyavardhini was established as a registered society in 1970 by late Padmashri H. G. alias Bhausaheb Vartak for the noble cause of education in rural areas.

Vidyavardhini's College of Engineering and Technology, Vasai is located on the sprawling campus of Vidyavardhini, spread over an area of 12.27 acres. It is a short, two minutes walk from Vasai Road (W) Railway Station. The college is also accessible by road from Mumbai.

Vidyavardhini Society received approval from AICTE to start the new college of Engineering & Technology with effect from July, 1994. The college is affiliated to the University of Mumbai for the four year degree program leading to the degree of Bachelor of Engineering in six branches.

Objective of VNC 2020 TASU

Technology has always been potential tool for simplifying the way we do things. Present time demands directing the technological advancements, towards addressing societal challenges such as improving health care, education environment, sanitation, agriculture, smart city, etc., VNC 2020 TASU aims to provide an opportunity to researchers, academicians, Industrialist and students to interact and share their ideologies and contributions made for social upliftment with the aid of technological advancements.

Call for paper

We welcome submission in following area

1. Sustainable Computing
 2. High Performance Computing
 3. High Speed Networking and Information Security
 4. Software Engineering and Emerging Technologies
 5. Mathematical, Experimental, Computational and AI, IoT Techniques in Mechanical Engg.
 6. Industrial Engg., ERP, MRP, SCM
 7. Renewable Energy Technologies
 8. Pollution control and Waste Management
 9. Advances in Structural engineering
 10. Present geotechnical practices
 11. Present practices in construction management
 12. Recent developments in Instrumentation, control and automation
 13. Embedded Systems, IoT and VLSI Design
 14. Optical and Wireless Communication for NGN
 15. Antenna and Microwave Devices
- Any other relevant topics

Publication Information

Proceedings of VNC - 2020 TASU will be published with ISBN number

1. Selected Papers will be published in International Journal of Information Technology, Published by Springer Nature, ISSN: 2511-2104 (Print Version), ISSN: 2511-2112 (Electronic Version)

2. All papers will be published in IJERT, ISSN: 2278-0181

Important Dates:

- Submission of full length paper
15th Feb 2020
- Paper Acceptance Notification
22nd Feb 2020
- Submission of Final Version of Paper
29th Feb 2020
- Registration Deadline
5th March 2020
- PPT Submission
20th March 2020
- Conference
4th April 2020

Registration Fee Details:

Category of Delegates / Authors	Indian Authors & Delegates (in INR)
Full Time Students (UG)	1,500.00
Teachers/ Research Scholars/ PG students	2,500.00
Industry	3,500.00

Paper Submission:

Paper submission should be made strictly via Easy Chair the submission link for VNC 2020 "TASU":

www.easychair.org/conferences/?conf=vnc2020

Download paper template from:

https://www.vcet.edu.in/vnc2020/template_for_full_paper%20VNC%202020.doc

Contact Us:

Mr. Yogesh P. Pingle
Vidyavardhini's College of
Engineering & Technology
K.T. Marg, Vasai (W) - 401202
Maharashtra, India
Contact No.: 9665009742
Email ID: vnc20@vcet.edu.in
Website: www.vcet.edu.in/vnc2020/

***Best paper award
for each track***

Optimization of Suspension Parameters using LOTUS Shark Suspension Analyser

Nilesh Singh
Mechanical Department
Vidyavardhini's College of Engineering & Technology (VCET)
Mumbai, India
nrsingh1997@gmail.com

Sarang Patil
Mechanical Department
Vidyavardhini's College of Engineering & Technology (VCET)
Mumbai, India
sarangvpatil5@gmail.com

Rohan Arwari
Mechanical Department
Vidyavardhini's College of Engineering & Technology (VCET)
Mumbai, India
rohanarwari@gmail.com

Aditya Waingankar
Mechanical Department
Vidyavardhini's College of Engineering & Technology (VCET)
Mumbai, India
adi.w.2998@gmail.com

Uday V. Aswalekar
Mechanical Department
Vidyavardhini's College of Engineering & Technology (VCET)
Mumbai, India
uday.aswalekar@vcet.edu.in

Abstract— Suspension and steering systems are considered to be one of the major systems of the vehicle dynamics. The suspension helps in absorbing the various forces acting on car for eg. Bumps, droop, roll, pitch, bounce etc. and provides a comfortable ride to the driver. The main aim of this paper is to optimize the suspension and steering system for a formula SAE vehicle. The achieving of good riding condition of the car involves compromise between different static as well as dynamic factors and thus we plan to build a good suspension geometry by taking iterations of combination of various factors and optimizing it by using LOTUS Shark suspension analyzer. Kin pin inclination (KPI) and Castor angle both were optimized to 4 degrees. Whereas Camber angle for front was optimized to negation 2 degrees and for rear it was optimized to negative 1 degree. Using LOTUS Shark suspension analyzer we were expecting the variation in above angle to be within plus or minus 1 degree.

Keywords— Camber, Castor, Kin pin inclination (KPI), Suspension, Steering, Geometry, Formula Society of Automotive Engineers (FSAE), Ackermann, LOTUS Shark.

I. INTRODUCTION

FSAE race car is a single driver system which is designed to race on track having multiple number of turns along with testing its acceleration. The basic aim of FSAE race car is to achieve a better ride and stability at good speed across the track. The suspension and steering system have to undergo different driving conditions, thus there are many static as well as dynamic factors which influence the behavior of a car during these conditions. Suspension geometry depends on many parameter out of which 3 parameters have been discussed in this paper namely:

1. Camber change due to bump.
2. Camber change due to roll.
3. Camber change due to steering.
4. KPI change due to bump.

II. OBJECTIVE

- To minimize camber gain due to bump.
- To minimize camber gain due to roll.
- To minimize camber gain due to steering.
- To minimize KPI gain due to bump.
- To better ride stability at all condition.

III. BASIC TERMINOLOGY

A. Kingpin inclination:

It is also known as "Steering axis inclination" is the angle from vertical to the steering axis of the tire between the upper and lower ball joint viewed from the front as shown in fig 1.

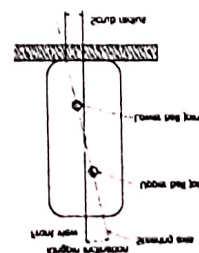


Fig 1: Kingpin inclination and Caster angles

B. Camber Angle

The angle of the wheel in- or outwards respective to vertical viewed from the front is called a camber angle. It is shown in fig 2.

Handwritten signature/initials in a circle.

HEAD
Dept. of Mechanical Engg.
Vidyavardhini's College of
Engineering & Technology
Vasai Road-401202.