Ayush Jaiswal

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Contact Information

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Research Background

- **Algebraic Geometry**: More specifically, I think about parabolic bundles and d-holomorphic bundles on Klein surfaces.

Education

Indian Institute of Technology, Gandhinagar(IITGn), India 2017–2023 (expected)

- Ph.D. in Discipline of Mathematics, CPI: **7.94** – via 44 credits.
- Advisor: Prof. Sanjaykumar Amrutiya.

Indian Institute of Technology, Kanpur(IITK), India. 2013–2015

- M.Sc., Mathematics. CPI: **7.2** – via 80 credits

Technical Skills

- *Programming Languages*: C/C++, Python
- *Technical Softwares*: MATLAB, Git-hub

Research Experience

- *On d-holomorphic connections and gauge theoretic aspects of parabolic bundles over Klein surface*(Ph.D. Thesis) 2017–2023(expected)
  Discipline of mathematics, Indian Institute of Technology, Gandhinagar.
  - We have developed the theory of d-holomorphic connection on d-holomorphic vector bundle on Klein surface and gave its existence criteria. Also, we have found that gauge orbits of appropriate space of real connections on real parabolic bundle on Klein surface under appropriate space of gauge group sits inside real point of moduli space of parabolic bundle.

Research Interests

Algebraic Geometry

- Parabolic bundles
- d-holomorphic bundles

Selected Publications/Preprints

1. Sanjay Amrutiya, Ayush Jaiswal, "*On d-holomorphic connections*", arXiv preprint arXiv : 2208:04354; 2022.
2. Sanjay Amrutiya, Ayush Jaiswal, "*A gauge theoretic aspects of parabolic bundles over Klein surfaces*", arXiv preprint arXiv : 2202:06210; 2022.

Professional Achievements/Awards/Scholarships

- Secured 2nd position(merit based) in during B.Sc.(IInd year) 2010–2011
- *Joint Admission Test for Masters(JAM)* organised by *Indian Institute of Technology, Delhi(IITD)* 2013
- *Graduate Aptitude Test for Engineering(GATE)* organised by *Indian Institute of Technology, Kanpur(IITK)* 2015
- *Graduate Aptitude Test for Engineering(GATE)* organised by *Indian Institute of Science, Bangalore(IISC)* 2016
- *Junior Research Fellow(JRF)* organised by *Council of Scientific and Industrial Research(CSIR)* 2015,2016

Workshops/ Conferences attended

- *Moduli of bundles and related structures* at ICTS, Bangalore, India.
  10 February–14 February, 2020
- Workshop on *Characteristic classes and cobordism* at IIT Bombay, Powai, Maharashtra, India.
  4 March–15 March, 2019
- AIS(Advanced Instructional School) on *Linear Algebraic Groups* at IIT Bombay, Powai, Maharashtra, India. 24 June–13 July 2019
- AIC(Advanced Instructioncal Course) on *Commutative Algebra* in online mode.
  2 January–2 May, 2021
- AIS(Advanced Instructional School) on *Basic Algebraic Geometry* at IISER Pune, Pune, Maharashtra, India. 25 June–14 July, 2018

Delivered Talks/Poster Presentations

1. On d-holomorphic connections(Talk), *Conference on Algebraic Geometry*, Harish Chandra Institute, Prayagraj, India. December 12-16, 2022.
2. On d-holomorphic connections(Poster presentation), *Vector bundles in Chennai*, Department of mathematics, IIT Madras, Chennai, India. February 6-11, 2023.

Teaching Experience

- Graduate Teaching Fellow for the course MA 102, Mathematics II(Linear Algebra and Differential Equations) at IIT Gandhinagar, Gujarat, India Spring semester, 2018–2019
- Graduate Teaching Fellow for the course MA 504, Linear Algebra at IIT Gandhinagar, Gujarat, India Autumn semester, 2019–2020
- Graduate Teaching Fellow for the course MA 102, Mathematics II(Several Variable Calculus and Complex Analysis) at IIT Gandhinagar, Gujarat, India Spring semester, 2019–2020
