DECLARATION

I declare that the thesis entitled, A SIMULATION STUDY OF COLLECTIVE BEHAVIOUR OF HADRONIC MATTER AT FAIR ENERGIES, has been prepared by me under the guidance of Prof. Amitabha Mukhopadhyay, Department of Physics, University of North Bengal. No part of this thesis has been formed on the basis of any previously awarded degree or fellowship.

Soumya Sarkar

Date: 27/12/2021

Soumya Sarkar

Department of Physics
University of North Bengal
Siliguri 734 013, Darjeeling, India

CERTIFICATE

This is to certify that the work contained in the thesis titled " A SIMULATION STUDY OF COLLECTIVE BEHAVIOUR OF HADRONIC MATTER AT FAIR ENERGIES" submitted by Mr. Soumya Sarkar, has been carried out in the Department of Physics, University of North Bengal under my supervision. This work has not been submitted elsewhere for any degree/diploma.

Amitabha Mukhopadhyay

Date: 27/12/2021

Prof. Amitabha Mukhopadhyay
Supervisor

Department of Physics
University of North Bengal
Siliguri 734013, West Bengal, India

Curiginal

Document Information

Analyzed document	Soumya Sarkar_Physics.pdf (D123562954)
Submitted	2021-12-23T08:58:00.0000000
Submitted by	University of North Bengal
Submitter email	nbuplg@nbu.ac.in
Similarity	1%
Analysis address	nbuplg.nbu@analysis.urkund.com

Sources included in the report

W	URL: https://drupal.star.bnl.gov/STAR/files/thesis_Rihan_Haque.pdf Fetched: 2021-11-03T15:04:36.5730000	9
J	URL: e55b8639-610b-40af-970e-44e4d725c2ae Fetched: 2019-02-19T01:28:30.1470000	2
W	URL: https://arxiv.org/pdf/2111.05248 Fetched: 2021-11-23T20:02:59.8530000	1
W	URL: https://www.math.ucdavis.edu/~linear/linear-guest.pdf Fetched: 2020-03-21T17:02:05.8870000	1
W	URL: https://www.science.gov/topicpages/u/ultrarelativistic+heavy-ion+collisions Fetched: 2021-11-08T08:20:36.0970000	1
W	URL: https://d-nb.info/1043978305/34 Fetched: 2021-07-14T12:31:20.0970000	1
W	URL: https://en.wikipedia.org/wiki/Pseudorapidity Fetched: 2020-01-17T23:52:25.3400000	1

Acknowledgments

I would like to take this opportunity to express my sincere appreciation for all those who have supported, encouraged, and inspired me in the pursuit of my research work. My thesis work would have not been possible without the support and encouragement from my teachers, colleagues, friends and family members. First and foremost, I would like to thank my supervisor Prof. Amitabha Mukhopadhyay of the Physics Department of North Bengal University for teaching me many Physics courses in the post-graduate level, and also for guiding my Ph.D. research. My interactions with him during the past several years has been a great experience. His constructive criticism on my research work was essential for a successful completion of this thesis. I would like to express my sincere gratitude to Dr. Provash Mali of the Physics Department of North Bengal University for his constant help and support, particularly at the beginning of my research career in the area of computational work and in developing software. I also acknowledge the discussions that on several occasions I had with Prof. Subhasis Chattopadhyay and Dr. Partha Pratim Bhaduri, both from the Variable Energy Cyclotron Centre, Kolkata, during my stay there at the early stages of my research career. My heartfelt gratitude goes to Mr. Sanjib Kumar Manna, Mr. Somnath Ghosh and especially to Mr. Joydeep Thakur, research students of the Physics Department of North Bengal University, for maintaining an enjoyable working atmosphere in the laboratory and for their very warm hearted help and support. It is also a great pleasure to thank all my colleagues at the Siliguri College. Finally and most importantly, I would like to convey my deepest sense of gratitude to my family for the much and often needed moral support, which has kept me going.

Soumya Sarkar

Dedicated to the memory of
My Father

List of Tables

List of Figures