بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــســـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

PRODUCTION OF CHARGED AND NEUTRAL HIGGS BOSONS WITH CHARGINOS AND NEUTRALINOS THROUGH DIFFERENT PROPAGATORS IN THE *MSSM*

BY

HATIM HEGAB ALI HEGAB

A Dissertation submitted to the Faculty of Science, Cairo University
in partial fulfillment of the requirements
for the Degree

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Minor Subject: Theoretical High Energy Physics

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Approval Sheet

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"Production of charged and neutral Higgs bosons with Charginos and Neutralinos through different propagators in the MSSM"

Name of the candidate

Hatim Hegab Ali Hegab

Supervision committee

Prof. Dr. M. M. El-Kheshin
Physics Department
Faculty of Science
Cairo University

Dr. Tarek A. Aziem
Physics Department
Faculty of Science
Cairo University

Prof. Dr. Abdel Meneim refaat
Head of Physics Department
Faculty of Science
Cairo University

" Associated production of charged and neutral Higgs bosons accompanied by Charginos and Neutralinos through different propagators in the *MSSM* ," a dissertation prepared by Hatim Hegab Ali Hegab in partial fulfillment of the requirements for the degree, Master of Science, Physics. , has been approved and accepted by the following:

Prof. M. M. El-Khishen
Prof. of Theoretical Physics,
Faculty of Science,
Cairo University.

Dr. Tareq Abdul Aziem
Doctor of Physics,
Faculty of Science,
Cairo University.

Date

Committee in charge:

Prof. Dr. M. M. El-Khishen, Chair

Prof. of Theoretical Physics,

Faculty of Science,

Cairo University.

Dr. Tareq Abdul Aziem

Doctor of Physics,

Faculty of Science,

Cairo University.

DEDICATION

This work is dedicated to my first teacher of mathematics, **my mother**. And to my father, the late **Prof. Hegab Ali Hegab, ex. Prof. of Microbiology at The Technical Agricultural Institute in Kaseem, Bureidah, Saudi Arabia** whose guidance, instructions and kind heart helped to shape and build my personality. And finally, to my wife, **Mrs. Marmar Maghraby Hussein**, and my daughhter, **Basma (a smile)**, their existence in my life gave me the power to do.

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ABSTRACT

ASSOCIATED PRODUCTION OF CHARGED AND NEUTRAL HIGGS BOSONS ACCOMPANIED BY CHARGINOS AND NEUTRALINOS THROUGH DIFFERENT PROPAGATORS

BY

HATIM HEGAB ALI HEGAB

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Egypt, 2006

Dr. Tarek Abdul Aziem

In this work, the following reactions have been studied;

1. $e^-e^+ \rightarrow H^-\widetilde{\chi}_1^+\widetilde{\chi}_1^o$

2. $e^-e^+ \rightarrow h\widetilde{\chi}_1^+\widetilde{\chi}_1^-$

3. $e^-e^+ \rightarrow h\widetilde{\chi}_1^o\widetilde{\chi}_1^o$

4. $e^- e^+ \rightarrow hH^+H^-$.

where $\widetilde{\chi}_1^{\pm}$ is the chargino and $\widetilde{\chi}_1^0$ is the neutralino. h represent the lightest neutral Higgs boson, and H_3 (sometimes refered to as A) is the pseudoscalar Higgs boson.

The work went to calculate the differential cross section due to each Feynman diagram, then, the *total cross section* for each reaction is calculated according to a carefully used set of parameters. Results are graphed and tabulated.

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