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MODAL ANALYSIS OF TWO DIMENSIONAL OPEN PERIODIC STRUCTURES

By

Mostafa Ibrahim Mohammed Abdullah Al-Kholi

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Electronics and Electrical Communications Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Prof. Tamer M. Abuelfadl

Professor of Electromagnetic Waves
Electronics and Electrical Communications Engineering
Faculty of Engineering, Cairo University

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Approved by the
Examining Committee

_____

Prof. Tamer M. Abuelfadl, **Thesis Main Advisor**

_____

Prof. Islam A. Eshrah **Internal Examiner**

_____

Prof. Ahmed M. Attiya **External Examiner**

- Professor in Electronics Research Institute

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
2021

Engineer's Name: Mostafa Ibrahim Mohammed Abdullah Al-Kholi
Date of Birth: 06/12/1987
Nationality: Egyptian
E-mail: m.e.khouli@gmail.com
Phone: 01113142523
Address: 5 street 13, Mouazzafeen city, Helwan, Cairo, Egypt

Registration Date: 01/03/2015
Awarding Date: …/…./2021
Degree: Master of Science
Department: Electronics and Electrical Communications Engineering

Supervisor:
Prof. Tamer M. Abuelfadl

Examiners:
Prof. Tamer M. Abuelfadl (Thesis main advisor)
Prof. Islam A. Eshrah (Internal examiner)
Prof. Ahmed M. Attiya (External examiner)
Professor in Electronics Research Institute

Title of Thesis:

MODAL ANALYSIS OF TWO DIMENSIONAL OPEN PERIODIC STRUCTURES

Key Words:
Open periodic structures, Modal analysis, Improper modes, Scan blindness, Method of moment

Summary:
Applying modal analysis using the Method of moment and Floquet theorem in spectral domain to a two dimensional open periodic structure, describing the nature of every possible mode: bounded or unbounded, proper or improper and determining precisely when a mode changes its nature from proper to improper or vice versa.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Mostafa Ibrahim Mohammed Abdullah Al-Kholi Date: / /2021

Signature:

Dedication

To my parents, sisters and brothers

Acknowledgment

To Prof. Tamer M. Abuelfadl, for his patience, crucial advices and support.

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