

Contents

Acknowledgements	iv
Research Publications	v
Synopsis	vi
1 Introduction	1
2 The Standard Model: Some Issues Revisited	5
2.1 The Standard Model	5
2.2 Quark Masses	11
2.3 CP Violation and Neutral Meson Systems	14
2.3.1 The $K^0-\overline{K}^0$ system:	15
2.3.2 Sources of CP Violation	20
2.3.3 The $B_d^0-\overline{B}_d^0$ system	22
3 Quark Masses And Mixings	24
3.1 Models for Quark Masses and Mixings	24
3.1.1 Stech Model:	24

5.1	Large Magnetic Moment for Nearly Massless Neutrinos	59
5.2	Gravitational Helicity Flip of Neutrinos	65
5.3	Model for the 17 <i>keV</i> Neutrino	69
6	Summary	75
	Bibliography	79