CONTENTS

§	0	Introduction	I
§	1	Generalities on semi-classical analysis	1
		§ 1.1 The classical mechanics § 1.2 The quantum mechanics § 1.3 Some basic results of the Schrödinger operator	
§	2	200	7
		§ 2.1 The harmonic oscillator § 2.2 Approximate solutions starting from the harmonic oscillator § 2.3 The B.K.W construction § 2.4 Proof of propositions 2.3.6 and 2.3.7	
§	3	The decay of the eigenfunctions 1	9
		 § 3.1 Energy estimates § 3.2 The Agmon distance § 3.3 Decay of eigenfunctions for the one-well Dirichlet problem § 3.4 Localization of the spectrum for the Dirichlet problem at the bottom. § 3.5 Decay in the case of multiple wells Dirichlet problems. 	
§	4	Study of interaction between the wells 3	0
		§ 4.1 Preparations in functional analysis § 4.2 To what extent can we forget the tunneling effect § 4.3 The tunneling effect § 4.4 Study of the multiple wells problem at the bottom. § 4.5 The case :n=1	
§	5	An introduction to recent results of Witten 6	1
		<pre>§ 5.1 Introduction § 5.2 Proof of the strong Morse inequalities</pre>	
§	6	On Schrödinger operators with periodic electric potentials 7	1
		§ 6.1 Generalities § 6.2 Semi-classical study of the first eigenvalues of $P_{\boldsymbol{\theta}}(h)$	
§	7	On Schrödinger operators with magnetic fields 7	9
		§ 7.0 Introduction § 7.1 A criterion of compact resolvent § 7.2 Spectral effects due to the flux of the magnetic fields	
		7.2.1 A qualitative result	
		7.2.2 The semi-classical approach § 7.3 On the multiplicity of the first eigenvalue	
Re	eferen	ces. 10	0

106

Index