

**ERRATA CORRIGE** June 5 2019

V. Moretti, **Spectral Theory and Quantum Mechanics: Mathematical Structure of Quantum Theories, Symmetries and introduction to the Algebraic Formulation**, Springer 2018

The author thanks A. Di Matteo, M. Oppio, K.-H. Neeb, T. Nowik

<b>ERRATA</b>	<b>CORRIGE</b>
<p>p52, 8<sup>th</sup> from the top, right-most term in the formula</p> $\leq \ b_0\  (1 + \ b_0\  + \ a_0\ )$	<p>Correct to</p> $\leq \ a - a_0\  (1 + \ b_0\ ) + \ a_0\  \ b - b_0\ $
<p>P53 displayed formula on line 7 from the top</p> $\dots (-1)^n ((c-b)b^{-1})^n \dots$	<p>Correct to</p> $\dots (-1)^n (b^{-1}(c-b))^n \dots$
<p>P110 displayed formula 9<sup>th</sup> line from the top</p> $p(x,y)^2 \leq (p(x)+p(y))^2$	<p>Correct to</p> $p(x+y)^2 \leq (p(x)+p(y))^2$
<p>p314, 3rd line from the top</p> <p>“...for the restrictions of <math>\geq</math> and <math>\neg</math>.”</p>	<p>Complete the statement</p> <p>“...for the restrictions of <math>\geq</math> and <math>\neg</math>. <b>More precisely, <math>\sup\{a,b\}</math> and <math>\inf\{a,b\}</math> computed in the subset must coincide with, respectively, <math>\sup\{a,b\}</math> and <math>\inf\{a,b\}</math> computed in X and the top and the bottom of the subset must coincide with those of X.</b>”</p>
<p>p724, text of <b>Definition 12.57</b></p> <p>“An embedded (analytic) submanifold <math>G' \subset G</math> in a Lie group that is also a subgroup inherits a Lie group structure from G. In such case <math>G'</math> is a <b>Lie subgroup</b> of G.”</p> <p>...</p> <p>A Lie group G is said to be <b>simple</b> if it does...”</p>	<p>Correct and complete to</p> <p>“An <b>immersed</b> (analytic) submanifold <math>G' \subset G</math> in a Lie group that is also a subgroup and inherits a Lie group structure from G is called <b>Lie subgroup</b> of G. <b><math>G'</math> is an embedded Lie subgroup if it is also embedded as a submanifold.</b>”</p> <p>...</p> <p>An <b>Abelian Lie</b> group G is said to be <b>simple</b> if it does...”</p>
<p>p725, text of <b>Theorem 12.59</b></p> <p>“...then <math>G'</math> is a Lie subgroup of G (including the case of a discrete Lie group)...”</p>	<p>Insert the missed text</p> <p>“...then <math>G'</math> is an <b>embedded</b> Lie subgroup of G (including the case of a discrete Lie group)...”</p>
<p>p725, Immediately after <b>Proposition 12.60</b></p> <p>“Summing up, closure completely characterises Lie subgroups.”</p>	<p>Insert the missed text</p> <p>“Summing up, closure completely characterises <b>embedded Lie</b> subgroups.”</p>
<p>p730, text of <b>Theorem 12.66, Hypotheses</b></p> <p>“Let G be a connected non-compact Lie group and...”</p>	<p>Insert the missed text</p> <p>“Let G be a connected non-compact <b>simple</b> Lie group and...”</p>
<p>p731, text of <b>Theorem 12.66, Proof, 6th line from the top</b></p> <p>“By definition of Lie subgroup, <math>U_0</math> is an embedded submanifold of <math>U(n)</math>.”</p>	<p>Complete the statement</p> <p>“<b>Since G is a simple Lie group its Lie algebra is simple and hence it is semisimple. As a consequence <math>U_0</math> is semisimple as well and Theorem 14.5.9 of [HiNe13] implies that it is closed in <math>U(n)</math>. Finally Cartan’s theorem proves that <math>U_0</math> is a Lie subgroup of <math>U(n)</math>.</b> By definition of Lie subgroup, <math>U_0</math> is an embedded submanifold of <math>U(n)</math>.”</p>
<p>p731, text of <b>Remarks 12.67 (1)</b></p> <p>“The theorem applies to <math>SO(1, 3)_\dagger</math> since this is non-compact...”</p>	<p>Insert the missed text</p> <p>“The theorem applies to <math>SO(1, 3)_\dagger</math> since this is a <b>simple Lie group</b>, non-compact...”</p>

