Erratum

Bloch varieties of higher-dimensional, periodic Schrödinger operators

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In [3, Section 4], we introduced the Dirac operator

$$\begin{pmatrix} v & \partial_k \\ -\bar{\partial}_k & w \end{pmatrix}$$

and claimed that its resolvent can be realised as a meromorphic, operator-valued function, the values being compact operators on $L^2 \times L^2$. This is, for the spaces of potentials in question, not correct. While it is true that the operator

$$\left(\lambda - \begin{pmatrix} v & \partial_k \\ -\bar{\partial}_k & w \end{pmatrix} \right)^{-1}, \quad (1)$$

λ being in the resolvent set, is a continuous linear operator from $L^1_{\log} \times L^2$ into $W^{1,2} \times W^{1,1}$, sub-criticality of the embedding into $L^2 \times L^2$, necessary to apply the Rellich–Kondrashov theorem, is lacking in the second factor of the direct product.

We remark here that for each single instance of (1), a compactness result can still be attained by making use of the Lorentz–Karamata spaces of J. Neves (see [1, Appendix] for details). However, as it turns out that the Dirac theory is, for our extreme choice of potentials, not as useful as expected, we simply *retract* our compactness claim and all dependent statements in [3], in particular Proposition 4, Theorem 3, and Corollary 1. Repaired versions of these statements based on Schrödinger theory only can be found in [2].

Bibliography

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