Chapter 2. Preliminaries

The point sets $\Lambda$ in Definition 2.3 and Proposition 2.1 need to be discrete.

* In the proof of Proposition 2.2 on page 16, it should read $F' = F - F$ in the penultimate line.

* On page 18, in the sentence after Definition 2.8, the set $A \subset X$ should be closed.

* In the sentence following Eq. (2.8) on page 24, $A_5$ is the first non-Abelian simple group in the series of alternating groups.

* In the second paragraph of Section 2.3.3, it is tacitly assumed that all group operations are continuous in the topology of $G$.

Chapter 4. Symbolic Substitutions and Inflations

In the second paragraph of page 82, the set $\mathcal{P}(\mathcal{X})$ is compact in the weak-* topology.

In the last paragraph on page 86, the brief explanation of proximality is, strictly speaking, that of asymptotic proximality. This makes no difference for the later use of the term in this volume.

On the right-hand side of the second identity in Eq. (4.14), one should better write $v_i$ instead of $\bar{v}_i$. Likewise, in the first equation on page 103, one should write $\bar{v}_m$ instead of $\bar{v}_m$.

* In the proof of Lemma 4.10 on page 106, one needs to use the maximum instead of the minimum for both choices of $i$.

Chapter 5. Patterns and Tilings

* In Definition 5.1, a pattern is meant to be a countable non-empty set of non-empty subsets of $\mathbb{R}^d$. Note that this use of the term ‘countable’ includes the possibility of a finite set.

One consequence of Definition 5.8 is that the set $\{t \mid T \cap (t + K) = T \cap K\}$ is relatively dense in $\mathbb{R}^d$. 
Chapter 6. Inflation Tilings

In Figure 6.41 on page 236 (undecorated Ammann–Beenker tiling), a spurious line appeared in some of the squares in print. The correct figure is reproduced below for convenience.

Figure 1. The Ammann–Beenker tiling of Figure 6.41 redrawn.

Chapter 8. Fourier Analysis and Measures

The function \( f \) in line 4 of Section 8.1 should also be assumed continuous.

For the explanation of Eq. (8.4), the reader may also want to consult


On page 319, three lines before Eq. (8.13), the set $S$ is a Borel set. Similarly, on page 322, the set $A$ in the proof of Lemma 8.2 is Borel.

In line 5 of page 324, the set $K$ must be non-empty.

The proof of Theorem 8.4 also shows that, if measures $\mu_n$ norm converge to a measure $\mu$, with $\mu_n \perp \nu$, then also $\mu \perp \nu$.

**Chapter 9. Diffraction**

Note that the diffraction patterns of Figure 9.2 use the same type of representation as explained in the caption of Figure 9.6.

* In Example 9.8, the amplitude $A(k)$ depends on $\varepsilon$, through the $\ast$-map of the dual cut and project scheme.

Eq. (9.22) on page 357 should be completed as

$$L^\ast := \pi(L^*) = \left\{ \frac{1}{2} \left( m + \frac{n}{\sqrt{2}} \right) \mid m, n \in \mathbb{Z} \right\} = \frac{\sqrt{2}}{4} \mathbb{Z}\sqrt{2}.$$  

* The last equation before Corollary 9.4 on page 362 must read

$$\eta(z) = \text{dens}(\mathcal{L}) (h \ast \tilde{h})(z^*),$$

where $\mathcal{L}$ is the embedding lattice introduced earlier. Consequently, the correct formula for the amplitude in Corollary 9.4 is $A(k) = \text{dens}(\mathcal{L}) \tilde{h}(-k^*)$. This is in agreement with Proposition 9.10 and Theorem 9.5 on page 385.

In the last equation of Theorem 9.4 on page 365, the integral should be over $W$ (rather than over $H$).

In the last sentence of Remark 9.16 on page 379, the relation on the Eberlein convolution von $\delta_2$ with $\omega_0$ can be extended to $\delta_2 \circ \omega_0 = \delta_2 \circ \omega_0^- = \frac{1}{3} \delta_2$.

**Chapter 11. Random Structures**

In Example 11.2 on page 436 and in Remark 11.2 on page 439, it might be more adequate to use the term ‘measure-theoretic entropy’ instead of ‘metric entropy’. Both terms are in use in the standard literature.

In Example 11.4, we illustrated two typical configurations of dimers as

$$\ldots[+ -][+ -][+ -][+ -][+ -][+ -][+ -][+ -][+ -][+ -]\ldots$$  
$$\ldots[- +][- +][- +][- +][- +][- +][- +][- +][- +][- +]\ldots$$

On page 441, the reference to Example 4.6 should refer to page 90 rather than to page 89.
In the last equation on page 448, one should write $O(|k|^{-1+\varepsilon})$.

On page 454, it should read ‘(symplectically) self-dual’ rather than ‘symplectic’ $N\times N$ matrices.

**Appendix B. The Dynamical Spectrum**

The function $\psi$ in the third equation on page 487 should be a bounded Borel function, hence $\psi \in L^\infty(T)$. The definition of $\psi(U_S)$ follows via an extension of that for trigonometric polynomials.

**References**

Ref. [BG13] has appeared, and is now changed to


The following reference has been added in Section 11.4.2:


The following reference substantiates the last sentence of Appendix B and has been added.


Ref. [BO13] has appeared, and has become


Ref. [BF12] has appeared, and is now changed to


The following reference has been added in Section 5.7.2:


The following references has been added in Example 10.4:


The following reference has been added in Remark 5.5:

The following reference has been added in Remark 7.1:


The initials of the first author of Ref. [DV-J88] should read D.J.

Ref. [FS12] has appeared, and is now changed to:


Ref. [FR13] has appeared, and is now changed to:


Ref. [GJS12] has appeared:


The volume in Ref. [GLA90] should be 85.

* Ref. [Gou03] should read:


The following references has been added in Example 10.4:


Ref. [KS12] has appeared, and is now changed to:


In Section 11.2.3, we added the following reference:


Ref. [PH13] has appeared:


Ref. [Pow11] has appeared, and is now changed to:

Ref. [ST10] was inaccurate, and has been changed to:


Ref. [Ter13] has appeared:

List of Definitions

2.1. Delone set 12
2.2. Meyer set 12
2.3. Finite local complexity (FLC), for point sets 13
2.4. Point lattice 15
2.5. Crystallographic point packing 16
2.6. Natural density 16
2.7. Uniform cluster frequency (UCF) 17
2.8. Cantor set 18
2.9. Sequences of van Hove type 29
2.10. Irreducible matrix 30
2.11. Cyclic and cyclically primitive matrices 30
2.12. Non-negative and primitive matrices 31
2.13. Pisot–Vijayaraghavan (PV) number 38
2.14. Salem number 39
3.1. (Non-)periodic and (non-)crystallgraphic point sets 45
3.2. (Non-)periodic and crystallographic measures 48
3.3. Root lattice 54
4.1. General substitution rule 67
4.2. Substitution matrix 68
4.3. Irreducible and primitive substitutions 69
4.4. One- and two-sided shift spaces 71
4.5. Legal word 71
4.6. Fixed point of a substitution 72
4.7. Two-sided symbolic (discrete) hull 72
4.8. Geometric inflation rule 74
4.9. Local indistinguishability (LI), symbolic case 75
4.10. Minimal dynamical system 75
4.11. Hull of a substitution 77
4.12. Repetitivity for words 77
4.13. Aperiodic sequences and substitution rules 79
4.14. Reflection symmetry and palindromicity 81
4.15. Ergodic measure on shift space 82
4.16. Sturmian sequence 114
4.17. Frequency module 118
5.1. Pattern and fragment 127
5.2. Tiling 128
5.3. Local finiteness 128
5.4. Cluster and patch 129
5.5. Local indistinguishability (LI), geometric case 129
5.6. Local derivability 133
5.7. Mutual local derivability (MLD) 133
5.8. Repetitivity 135
5.9. Linear repetitivity and $g$-repetitivity 136
5.10. Finite local complexity (FLC), for patterns 138
5.11. Continuous (geometric) hull and minimal hull 139
5.12. Non-periodic and (topologically) aperiodic point set 140
5.13. (Directional) proximality 141
5.14. Symmetry of pattern and hull 145
5.15. Local scaling property 146
5.16. Local inflation deflation symmetry and inflation multiplier 147
5.17. Inflation rule 147
5.18. Defining atlas 152
5.19. Local rules 152
5.20. Perfect and aperiodic local rules 153
5.21. Aperiodic prototile set 154
5.22. Strong aperiodicity 174
7.1. Cut and project scheme 263
7.2. (Regular) model set 264
8.1. Almost periodic function 307
8.2. Translation bounded measure 317
8.3. Norm convergence of measures 324
8.4. Positiv definite measure 327
9.1. Natural autocorrelation measure 334
9.2. Diffraction measure 337
9.3. Weak homometry of finite point sets 388
9.4. Homometry of finite point sets 388
9.5. Homometry of infinite point sets 390
9.6. Covariogram 392
9.7. Homometry of sets 392
11.1. Aperiodicity of measure-theoretic dynamical system 433