Abstract. This document provides errata to the first edition of SuperFractals. Later versions will include new material. Initially it will be updated on a regular basis.

1. Introduction

SuperFractals, published by Cambridge University Press, has now been in print for a couple of months. I am indebted to Arin Chaudhuri, Uta Frieberg, Michael Porter and Jonathan Stephenson for pointing out the errors which I note and correct below.

I use the convention that "p.15 line 12" means the twelfth line down from the top line. The top line is the first line below the running title. Similarly "p.15 line -12" means the twelfth line up from the bottom.

2. Errata for Chapter 1

p.15 line -15: Replace "for all $S \in S(\mathcal{X})$" by "for all $S \in S(\mathcal{Y})$".

p.27 EXERCISE 1.5.15 line -2: Replace "denote the shortest path" by "denote the arc-length of the shortest path".

p.30 line -1: Replace $0.\sigma_1\sigma_2\sigma_3...\sigma_mN$ by $0.\sigma_1\sigma_2\sigma_3...\sigma_mN$.

p.31 line -8: Replace $\xi(\sigma) = \sum_{n=1}^{m} (N+1)^n + \frac{1}{(N+1)^m}$ by $\xi(\sigma) = \sum_{n=1}^{m} \frac{\sigma_n}{(N+1)^n} + \frac{1}{(N+1)^{m+1}}$.

p.32 EXERCISE 1.6.8 1: Replace $\prod_{k=1}^{m} (\frac{\sigma_k}{2} + 0.499)$ by $\sum_{k=1}^{m} \sigma_k (0.499)^{k-1}$ and replace $\prod_{k=1}^{\infty} (\frac{\sigma_k}{2} + 0.499)$ by $\sum_{k=1}^{\infty} \sigma_k (0.499)^{k-1}$.

p.42: Topology generated by a basis

The first paragraph should be replaced by the following one.

"Let $\{O_i : i \in I\}$ be a collection of subsets of a space $\mathcal{X}$. Then the smallest topology $\mathcal{T}$ on $\mathcal{X}$ such that $O_i \in \mathcal{T} \forall i \in I$ is called the topology generated by $\{O_i : i \in I\}$. If $\mathcal{T} = \{O \subset \mathcal{X} : O = \bigcup_{i \in J} O_i, \text{ for some } J \subset I\}$"
then \( \{ O_i : i \in I \} \) is called a **basis** for \( T \). Then the open sets of \( T \) are exactly those that can be written as unions of members of the basis. Of course the sets in the basis, the individual \( O_i \), are open in \( T \)."

**p.46 line 15** \( T_f(Y) \) is a topology on \( Y \), not on \( X \).

**p.51, line 1** should have \( g : [0, 10) \subset \mathbb{R} \rightarrow \mathbb{R}^2 \) instead of \( g : [0, 10) \subset \mathbb{R} \rightarrow \mathbb{R}^2 \).

**p.54, line 1** The first sentence is wrong. It should say "The boundary of an open set contains no points of the open set."

**p. 76 line -4**. Replace the paragraph which begins "When the underlying metric..." by the following one:

When the underlying metric is \( d_\Omega \) with \( N > 3 \) it is hard to make illustrations similar to Figures 1.37 and 1.38 because there exist too many equidistant points. For example, when \( \Omega = \Omega \{1, 2, \ldots, N\} \) there exists a set containing \( N \) points each of which is at a distance \( 1/2 \) from all of the other points in the set. This implies that there does not exist an embedding \( \xi : \Omega \{1, 2, \ldots, N\} \rightarrow \mathbb{R}^{N-2} \) such that \( d_\Omega(\sigma, \omega) = d_{\text{euclidean}}(\xi(\sigma), \xi(\omega)) \); if the latter were the case then there would exist in \( \mathbb{R}^{N-2} \) a set containing more than \( N \) points, each of which is at unit euclidean distance from all other points in the set. The latter statement is not true, as demonstrated in Exercise 1.5.17. See also Figure 1.12.

**p.76 EXERCISE 1.12.30**: This exercise should read as follows: "Prove that in the metric space \( (\Omega \{1, 2, \ldots, N\}, d_{\Omega \{1, 2, \ldots, N\}}) \) there exists a set of \( N \) points, each of which is at a distance \( 1/2_m \) from all other points in the set, for all \( m = 1, 2, \ldots \).

**p.81, line -9** replace \( H(H(X)) \) by \( H(H(X)) \)

3. **Errata for Chapter 2**

**p.105, line 15** Replace \( \cap \) by \( \cup \).

**p.118, line -7** Replace 1/8 by 1/4.

**p.123, line -4** Replace \( P(X) \) by \( P(X) \).

**p.125, line 3** Replace \( \text{Lip}_1(X) \) by \( |h(x) - h(y)| \leq d(x, y) \).

**p.132, line -12** Replace \( g_i \) in the matrix by \( k_i \).

**p.162, fig. 2.47** Replace first \((1.1, 1.1)\) by \((0.9, 0.9)\), and interchange (bottom left) with (bottom right).

**p.169, Ex. 2.7.19** The bottom middle entry of the right-hand matrix should be 1.232, not 0.1232.

4. **Errata for Chapter 3**

**p.246, line 15** Replace \( f \) by \( F \).

**p.247, line -8** Delete \( f: \).

**p.248, line -5** Replace \( \mathcal{D}_\mathbb{R}_r \) by \( \mathcal{D}_\mathbb{R}_r \).

**p.264, fig. 3.48** The addresses in the caption should be 1111, 1212 and 2222.

5. **Errata for Chapter 4**

**p.328, lines 1** Replace \( l \) by \( \hat{l} \).

**p.331, line 20** Replace \( A \) by \( \mu \) throughout.

**p.332, line -4** Replace \( \mathcal{F}^k \) by \( \mathcal{F}^{\sigma r} \).

**p.348, line -7** Replace \( w^{-1}_\sigma(x) \) by \( f^{-1}_\sigma(x) \).

**p.355, line -1** Replace \( d(x_1, x_2) + |y_1 - y_2| \) by \( d(x_1, y_1) + |x_2 - y_2| \).
p.359, lines 18-19 Replace $\sigma 1\overline{0}$ by $\sigma 2\overline{1}$ and $\sigma 0\overline{1}$ by $\sigma 1\overline{2}$.
p.372, line 7 Replace $\phi_\mathcal{F}(\Omega_0)$ by $\phi_\mathcal{F}(\Omega_0) = A_0$.

6. Errata for Chapter 5

p.357, line 5: such as those.
p.371, line 7: Replace (4.11.1) not (4.16.1)
p.386, line 1 Replace “superfactals” by “superfractals”.
p.394, line -14 $\mathcal{B}(\mathbb{H}(\mathbb{X}))$ should be changed to $\mathcal{B}(\mathbb{H}(\mathbb{X}))$
p.409, line 11 Replace Hausdorff metric by Monge-Kantorovitch metric.
p.410, line 3 The hyperbolic IFS with probabilities has been labelled as $\mathcal{F}_1 \circ \mathcal{F}_1$; but it should be $\mathcal{F}_1 \circ \mathcal{F}_2$.

pp.428-430: On these pages I refer to the Hausdorff dimensions of the graphs of fractal interpolations. This fractal dimension should be replaced by a different one, namely the capacity dimension. These dimensions are often, but not always, equal.
p.416, line 5 The notation $v_{v,l}$ is somewhat confusing; only the subscript $v$ is meant to vary.
p.416, line 11: Replace $f^a$ by $f_a$.
p.430, line -3: heirarchical.

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