Errata

p. x: Schertzer and Lovejoy 2011 reference is missing. This should be:

> Schertzer, D. , S. Lovejoy (2011) Multifractals, Generalized Scale Invariance and Complexity in *Geophyics, Inter. J. of Bifurcations and Chaos*, **21**, 3417–3456, DOI: 10.1142/S0218127411030647.

p.xii: whole final paragraph 'DS thanks his students...' etc. to 'methodologies and paradigm changes.', should appear in the Acknowledgments section on p.xiii.

p. 2: "...in accord with Richardson."
 Authors provide the additional note: "...in accord with Richardson. In section 2.6 and in appendix 6A we (re)analyse more modern diffusion data showing that it does indeed vindicate Richardson up to at least several thousand kilometres."

p.4, section title 1.2: "resolution, revolution" should read "revolution resolution".

p.15, Figure 1.9d: "low frequency weather" should read "macroweather".

p. 25, column 1, line 1: "fig. 2.1" should read "fig. 2.2".

p. 26, column 1, above Eqn. 2.5: " $\underline{x} = \lambda \underline{x}'$ " should read "$\underline{r} = \lambda \underline{r}'$ "

p.35, Eqn. 2.70: This equation should read:

$$R(\tau) = \langle v(t)v(t+\tau)\rangle = F(E), \text{ i.e. } \langle v(t)v(t+\tau)\rangle = \int_{-\infty}^{\infty} d\omega \ e^{-i\omega\tau}E(\omega)$$

p.36, Eqn. 2.79: The upper limits $\sqrt{2}k_{n+1}$ should read $\sqrt{2}k_n$

p.37, Fig. 2.8: figure label (right hand side) "k^3" should read "k^{-3}"

p. 38, column 1, line 23: "βP" should read "β_p"

p.40, fig. 2.12: two changes.
1) top labels, signs are wrong (exponents of 10). Should read "$10^4, 10^3, 10^2, 10^1, 1, 10^1$"

2) internal fig labels -5/3 and -2.4 should be interchanged. Swap these labels.

p. 50, 3 lines above Eqn. 2.87: "vector ($\underline{k}$ *(ũ (k, t)*" should read "vector ($\underline{k}$ *ũ (k, t)*"

p.51, Eqn. 2.92: The integral should read: $\int_{-\infty}^{\infty} d\omega e^{i\omega\tau}E(\omega)$

p.51, Eqn. 2.94: The integral should read: $\int_{-\infty}^{\infty} d\omega E(\omega)\left(1 - e^{i\omega t}\right)$

p.53, Eqn 2.98: Eqn should read:

$$e = \frac{1}{2}\left\langle \left|\underline{v}(0)\right|^2 \right\rangle = \frac{1}{2}u(0)$$

p.53, 2 lines following Eqn 2.98: text should read:
"(by spatial homogeneity, there is no $\underline{r}'$ dependence). Introducing the inverse d-dimensional Fourier transform"

p. 53, line above Eqn. 2.103: "v(x)" should read "v($\underline{r}$)"

p.53, Eqn. 2.103: The equation should read:
$$u\left(\underline{r}\right) = \left\langle \underline{v}\left(\underline{r}'\right) \cdot \underline{v}\left(\underline{r}' + \underline{r}\right) \right\rangle = \int d^d \underline{k} d^d \underline{k}'\; e^{i\underline{k}\cdot\underline{r}} e^{i(\underline{k}+\underline{k}')\cdot\underline{r}'} \left\langle \tilde{\underline{v}}\left(\underline{k}\right) \cdot \tilde{\underline{v}}\left(\underline{k}'\right) \right\rangle$$

p.54, Eqn 2.107: "p(k)" should read "P(k)"

p.65, column 2, before 3.2.3: "(i.e. $D_{cor} \approx 0.2$)" should read "(i.e. $C_{cor} \approx 0.2$)"

p.71, Eqn. 3.9: Eqn should read: $N_\Lambda\left(l\right) \sim \left(\dfrac{L}{l}\right)^{D_F}$

p.71, Eqn. 3.13: Eqn should read: $\Pr\left(B_\lambda \cap A\right) \sim \dfrac{N\left(B_\lambda \cap A\right)}{N\left(B_\lambda \subset E\right)} \approx \dfrac{\lambda^{D_F(A)}}{\lambda^D}.$

p.85, column 1, bottom line: " $\varphi = \varepsilon^{1/3}$ " should read " $\varphi = \varepsilon^{1/2}$ "

p.94, 2 lines above Eqn. 4.18: "Eqn 4.2" should read "Eqn 4.4".

p.100, column 1, line 16: "see Table 4.7, below" should read "see Tables 4.5, 4.7".

p.119: column 2, 7th line from the bottom: "Prλ" should read "Pr$_\lambda$"

p.128, Eqn 5.47: the subscripts should read: $\varepsilon^{(h)} = \lim\limits_{\Lambda \to \infty} \varepsilon_{\Lambda/\lambda}^{(h)} = \Pi_\infty\left(B_1\right)$

p.136, Fig. 5.22: Subscript label within figure should read "q_D "
 - ie, $q_{D,V} = 7.7$ should read $q_{D,IR} = 7.7$, $q_{D,V} = 5.4$ should read $q_{D,DR} = 5.4$

p.137, below Eqn. 5.58: "Δx" should read "Δr".

p.139, 3rd line from bottom: "$\tau(q)=D(q-1)-K(q)$" should read "$\tau(q)=d(q-1)-K(q)$".

p.142: 2nd column, 3rd line: " $<e^{q\gamma\alpha}>$", the α should be subscript to 'α': $\left\langle e^{q\gamma_\alpha} \right\rangle$

p. 149, 4th paragraph (unnumbered Eqn set apart): should read " $v_\lambda = v_1 e^{\Gamma_\lambda}$"

p. 154, Eqn 5.103: The Equation should read:

$$\Delta v\left(x, \Delta x\right) = \frac{1}{\Delta x} \int v\left(x'\right) \Psi\left(\frac{x'-x}{\Delta x}\right) dx'$$

p.154, 2 lines below Eqn 5.103: "(technically, Δv" should read "(technically, $\Delta x \Delta v$"

p.158, column 1, 14th line from bottom: definition of quadratic Haar, third term: "$3s(x-\Delta x/3)$" should read "$3s(x+\Delta x/3)$"

p.161, column 1, line 12: "Eqn. (5.106)" should read "Eqn. (5.112)"

p.161, column 2, 10 lines below eq. 5.114: "$h(q)=H$" should read "$h(q)=1+H$"

p.169, column 2, 19 lines from end: $\left|\underline{x}\right|^{-d/\alpha}$ should read $\left|\underline{r}\right|^{-d/\alpha}$

p.169, column 2, 9 lines from end: In-line equation should read: "$\Gamma = g * \gamma$."

p.169, 8 lines from the end: $I = \left|\underline{x}\right|^{-(d-H)} * e^\Gamma$ should read $I = \left|\underline{r}\right|^{-(d-H)} * e^\Gamma$

p.176, Eqn 5.154 is missing absolute value sign on both right-hand terms:

$$\left(\Delta v\left(\Delta x\right)\right)_{tend} = \left|\mathcal{T}_{\Delta x} v\right| = \left|\frac{1}{\Delta x} \sum_{x<x'<x+\Delta x} v'\left(x'\right)\right|$$

p.176, Eqn 5.159 delete extra spacing: " $-3s(x+2\ \Delta x/3)$" should read "$-3s(x+2\Delta x/3)$"

p.186, column 2 above Eqn. 6.11: should read "f obeys a scalar advection equation"

p.209, Fig. 6.17: vertical axes and labels appear within graph area (figure fault).

p.216, bottom line in box: "H_z 2, 3" should read "H_z =2, 3".

p.217, Eqn. 6.55: Equation should read: $\left\langle \hat{f}\left(\underline{k}\right)\hat{f}\left(\underline{k}'\right) \right\rangle = \delta\left(\underline{k}+\underline{k}'\right)P\left(\underline{k}\right)$

p.217, Eqn. 6.58: Eqn should read: $E(k) = \int\limits_{\delta S_k} P\!\left(\underline{k}'\right) d^d \underline{k}'$.

p.225, above Eqn. 6.83: " $\underline{V} = \underline{X}$ " should read " $\underline{V} = \underline{\dot{X}}$ "

p.235, Eqn. 7.43: " a^2" should read "a^2 **1**"
 - Eqn should show as follows: $\left(G - d\mathbf{1}\right)^{2n} = a^2 \mathbf{1}$

p.238, Fig 7.5 end of caption: "a = 1.6" should read "α = 1.6"

p. 256, Eqn. 7.82: The integral should read: $\int d\underline{k}\!\left(1 - e^{i\boxplus_\lambda \underline{k} T_\lambda \Delta z}\right) P\!\left(\overline{T}_\lambda \underline{k}\right)$

p.316, 6 lines below Eqn. 9.17: "Eqn 9.14" should read "Eqn. 9.17".

Same notation corrections:
p.317, Eqn 9.23: iω should read -iω
p.326, Eqn 9.50:   iω+ should read -iω+
p.327, Eqn 9.53: iω should read -iω
p.328, Eqn 9.55: iω' should read -iω'

p.321, column 2, line 7: "1.5/10^{-6}" should be "0.5x10^{-6}".

p.322, Eqn 9.41: "H_τ" superscript should be "H_t".

p.323, Table 9.1, right column, 3rd eqn: the exponent "5/2-H" should be "5/2-H/H$_t$"
Also, in right column, second line from the bottom:

$\det\!\left(\dfrac{\partial^2 \omega(\underline{k})}{\partial k_i \, \partial k_j}\right)$ should read $\left[\det\!\left(\dfrac{\partial^2 \omega(\underline{k})}{\partial k_i \, \partial k_j}\right)\right]^{1/2}$

p.323, Eqn 9.46: $\det\!\left(\dfrac{\partial^2 \omega(\underline{k})}{\partial k_i \, \partial k_j}\right)$ should read $\left[\det\!\left(\dfrac{\partial^2 \omega(\underline{k})}{\partial k_i \, \partial k_j}\right)\right]^{1/2}$

p.323: 3 lines & and 4 lines below Eqn. 9.42: "H_τ" should be "H_t"

p.323, Eqn. 9.43: "H_τ" superscript should be "H_t"

p.323, Eqn. 9.44: both "H_τ" superscripts should be "H_t"

p.323, 3 lines below Eqn 9.44: "H/H_τ" should be "H/H_t"

p.323, column 2, 11th line from bottom: "$H_\tau = 2/3$" should be "$H_t = 2/3$".

p.336, Eqn 9.72: all H's should be italicised.

p.337, section title 10.1.1: should read "climate as an emergent scaling process"

p.373, Eqn 10.55: should read: $\dfrac{df}{dt} = af + \sigma\eta f$

p. 399, Table 11.4: "$\delta^{18}O$ from Vostok" should read "δD from Vostok" in two rows.
p. 410, Table 11.7, Outer scale column: second row should read "20 – 40 years"
- For columns H, C_1, α , values of Macroweather should appear as same for weather and climate rows. Ie, repeat values 0.7 (H), 0.1 (C_1), 1.4 (α) in blank rows above and below current values.

p.416, column 2, 10 lines below Eqn 11.12: "Eqn. (11.11)" should be "Eqn. (11.12)".

p.416: column 2, 4 lines up from end: "Eqn. (11.11)" should be "Eqn. (11.12)".

p.438, Radelescu reference, 3rd line: "In In" should read "In".

Index: Entry for 'macroweather' should appear in the index, as follows:
- macroweather, *4, 5, 13-16, 153, 157, 175, 275.. 281. 284, 286-288, 294, 309, 313, 337-382, 384, 388, 393, 396, 401, 407-411, 418-421, 424-426.*