Errata

This document contains the list of errors (with appropriate corrections) that we found after the publication of our book:


List of errors

PREFACE

1. Page xii, end of the formula in line 3 from the top.
   REPLACE
   ...(x)s,
   BY
   ...(x)ds,

CHAPTER 1

1. Page 8, formula (1.2).
   REPLACE
   \|f(t,\cdot)\|
   BY
   \|\rho(t,\cdot)\|

2. Page 102, Remark 2.15, second line of (A4).
   REPLACE
   ...and $a|_{[\eta,T]}(\cdot)$...
   BY
   ...and, for every $\eta \in [t,T]$, $a_1|_{[\eta,T]}(\cdot)$...

CHAPTER 2

1
1. Page 121, Hypothesis 2.33 (i), first line.
   REPLACE
   “... and \( l(t,x,a) \) are uniformly continuous in \( t \) on \([0,T]\), uniformly for \((x,a) \in B(0,R) \times \Lambda\) for every \(R > 0\).”
   BY
   “... and \( l(t,x,a) \) are continuous and uniformly continuous in \((t,x)\) on \([0,T] \times B(0,R)\), uniformly for \(a \in \Lambda\) for every \(R > 0\).”

2. Page 124, Theorem 2.36, third line.
   REPLACE
   “Let Hypotheses 1.125, 2.1 and 2.33-(ii)(iii) be satisfied”,
   BY
   “Let Hypotheses 1.125, 2.1 and 2.33 be satisfied”,
   i.e. “-(ii)(iii)” should be deleted.

3. Page 128, Hypothesis 2.40 (i), first line.
   REPLACE
   “There exist \(C,N > 0\) such that ...”
   BY
   “The functions \(b,\sigma\) and \(l\) are continuous, \(l(x,a)\) is uniformly continuous in \(x\) on \(B(0,R)\), uniformly for \(a \in \Lambda\) for every \(R > 0\). Moreover, there exist \(C,N > 0\) such that ...”.

4. Page 129, formula (2.69)
   REPLACE
   \(l(s,X(s),a(s))\)
   BY
   \(l(X(s),a(s))\)

5. Page 144, the formula in line 3 from the bottom.
   REPLACE
   \(...\langle Ax, Dv \rangle + F(Dv) + l_2(x)\...\)
   BY
   \(...\langle Ax + b(x), Dv \rangle + F(Dv) + l_1(x)\...\)

CHAPTER 3
1. Page 178, Example 3.16, line 4 from the top.
REPLACE
where $a_{ij} = a_{ji}, b_i, c \in L^\infty(\mathcal{O})$ for $i, j \in 1, \ldots, n, \ldots$
BY
where $a_{ij} = a_{ji}, b_i \in W^{1\infty}(\mathcal{O})$ for $i, j \in 1, \ldots, n, c \in L^\infty(\mathcal{O}), \ldots$

2. Page 178, Example 3.16, lines 13-14 from the top.
REPLACE
If, in addition, $a_{ij} \in W^{1\infty}(\mathcal{O}), b_i = 0, i, j \in 1, \ldots, n$ one can also take $B_0 = \lambda(\hat{A})^{-1}$ \ldots
BY
One can also take $B = \lambda(\hat{A})^{-1}$ \ldots

3. Page 195, line 15 from the bottom.
REPLACE
\[ \tilde{v}(s, y) = u(\ldots \]
BY
\[ \tilde{v}(s, y) = v(\ldots \]

4. Page 197, Definition 3.34, line 4 from the bottom.
REPLACE
“A locally bounded $B$-upper semicontinuous function $u$ on $[0, T) \times \overline{U}$ ...”
BY
“A locally bounded and continuous function $u$ on $[0, T) \times \overline{U}$ which is $B$-upper semicontinuous on $(0, T) \times \overline{U}$ ...”

5. Page 198, Definition 3.34, line 2 from the top.
REPLACE
“A locally bounded $B$-lower semicontinuous function $u$ on $[0, T) \times \overline{U}$ ...”
BY
“A locally bounded and continuous function $u$ on $[0, T) \times \overline{U}$ which is $B$-lower semicontinuous on $(0, T) \times \overline{U}$ ...”

6. Page 198, Definition 3.35, line 4 from the bottom.
REPLACE
“A locally bounded $B$-upper semicontinuous function $u$ on $(0, T] \times \overline{U}$ ...”
BY
“A locally bounded and continuous function $u$ on $(0, T] \times \overline{U}$ which is $B$-upper semicontinuous on $(0, T) \times \overline{U}$ ...”
7. Page 199, Definition 3.35, line 2 from the top.
   REPLACE
   “A locally bounded $B$-lower semicontinuous function $u$ on $(0, T] \times \overline{U}$ ...”
   BY
   “A locally bounded and continuous function $u$ on $(0, T] \times \overline{U}$ which is $B$-lower semi-
   continuous on $(0, T) \times \overline{U}$ ...”

   REPLACE
   ... if $C = 0$.
   BY
   ... if $b, \sigma$ are bounded.

9. Page 252, line 2 from the top.
   REPLACE
   $\kappa \omega(r)$
   BY
   $\kappa \omega_1(r)$

10. Page 252, line 11 from the top.
    REPLACE
    $\varphi(t, x, y) = \varphi_{\delta}(|x - y|^2_C + \gamma)^{\frac{1}{2}}(1 + t)$
    BY
    $\varphi(t, x, y) = \varphi_{\delta} \left((|x - y|^2_C + \gamma)^{\frac{1}{2}}\right)(1 + t)$

    REPLACE
    $m_{\tau}(|x - y|)$
    BY
    $m_{\tau}(|x - y|_{-1})$

    REPLACE
    $X(t) = x$
    BY
    $X_n(t) = x$

REPLACE

\[ \frac{h_r(|x|)}{|x|} \]

BY

\[ \frac{h_r(t,|x|)}{|x|} \]


REPLACE

\[ w(y) = \ldots \]

BY

\[ w(s, y) = \ldots \]

15. Page 305, line 5 from the bottom.

REPLACE

\[ \ldots \leq 2\delta K|x_i|^2_{0,\rho} \rightarrow 2\delta K|x|^2_{0,\rho} \]

BY

\[ \ldots \leq 2K|x_i|^2_{0,\rho} \rightarrow 2K|x|^2_{0,\rho} \]


REPLACE

\[ Y(t) \text{ in two places} \]

BY

\[ Y_N(t) \]

17. Page 327, line 5 from the bottom.

REPLACE

\[ Q_N(-A)^{-\frac{\alpha}{2}} \int_0^t (-A)^{2\alpha} e^{(t-s)A} (-A)\frac{\beta}{2} \sigma((-A)^{\frac{\alpha}{2}} Y(s), a_1(s))dW(s) \]

BY

\[ Q_N(-A)^{-\frac{\alpha}{2}} \int_0^t (-A)^{2\alpha} e^{(t-s)A} (-A)^{-\frac{\alpha}{2}} \sigma((-A)^{\frac{\alpha}{2}} Y(s), a_1(s))dW(s) \]

18. Page 327, line 3 from the bottom.

REPLACE

\[ \int_0^t (-A)^{\frac{\alpha}{2}} e^{(t-s)A} (-A)^{\frac{\alpha}{2}} P_N[\sigma((-A)^{\frac{\alpha}{2}} Y_N(s), a_1(s)) - \sigma((-A)^{\frac{\alpha}{2}} Y(s), \alpha_1(s))]dW_Q(s) \]

BY

\[ \int_0^t (-A)^{\frac{\alpha}{2}} e^{(t-s)A} (-A)^{-\frac{\alpha}{2}} P_N[\sigma((-A)^{\frac{\alpha}{2}} Y_N(s), a_1(s)) - \sigma((-A)^{\frac{\alpha}{2}} Y(s), \alpha_1(s))]dW_Q(s) \]

CHAPTER 4
1. Page 382, line 1 from the bottom.
   REPLACE
   \[ |G(y(r))^{-1}G(x)h|_Y \]
   BY
   \[ |G(y(r))^{-1}G(x)h|_Z \]
2. Page 383, line 7 from the top.
   REPLACE
   \[ s^{-1}[\varphi(t, s) - \varphi(t, 0)] \]
   BY
   \[ s^{-1}[\varphi(t, s) - \varphi(t, 0)]_Y \]
3. Page 521, line 2 from the top, formula (4.254).
   REPLACE
   \[ UC_b(X, L_1(H)) \]
   BY
   \[ UC_b(H, L_1(H)) \]
4. Page 541, line 16 from the top.
   DELETE
   pr2:exmildOUF0spsapp
   There should be “Proposition 1.147” there.

CHAPTER 5

1. Page 619, inequality (5.22).
   REPLACE
   \[ \alpha |K(x, X) - K(x, Y)|_{\mathcal{H}_{20}^0}^{\mu_0(0,T;H)} \]
   BY
   \[ \alpha |X - Y|_{\mathcal{H}_{20}^0}^{\mu_0(0,T;H)} \]
2. Page 649, Lemma 5.46, line 6 from the bottom (the first line of the formula defining \( \rho_{a(i)} \)).
   REPLACE
   \[ ... , dW_Q(r) \]
   BY
   \[ ... , Q^{-1/2}dW_Q(r) \]
3. Page 650, line 3 from the bottom.

REPLACE
\[ ... , dW_Q(r) \] 
BY
\[ ... , Q^{-1/2}dW_Q(r) \]

4. Page 650, line 1 from the bottom.

REPLACE
\[ ... , dW_Q(r) \] 
BY
\[ ... , Q^{-1/2}dW_Q(r) \]

5. Page 657, line 14 from the top (the second line of the three line formula).

REPLACE
\[ \int_s^t e^{(t-r)A}(R(r, X_n(r), a_n(r)) - R(r, X(r), a(r)))dr \] 
BY
\[ \int_s^t e^{(t-r)A}Q^{1/2}(R(r, X_n(r), a_n(r)) - R(r, X(r), a(r)))dr \]

APPENDIX B


REPLACE
\[ ... (\lambda I - A^m)(D(A_0)) ... \] 
BY
\[ ... (\lambda I - A^m)^{-1}(D(A_0)) ... \]

APPENDIX C

1. Page 851.

REPLACE THE FIRST TWO LINES OF SECTION C.4 BY THE FOLLOWING:

Let, as in Section C.2, \( H = L^2(O) \) and \( \Lambda = L^2(\partial O) \). Let \( \Xi = \Lambda, Q \in \mathcal{L}^+(\Xi) \), and let \( (\Omega, \mathcal{F}, \{\mathcal{F}_t\}_{t \in [\tau, T]}, \mathbb{P}, W_Q) \) be a generalized reference probability space. We consider the following problem:
2. Second line of formula (C.34).
REPLACE
\[ ... = h(s, y(s, \xi)) ... \]
BY
\[ ... = h(s, \xi) ... \]

3. Page 851, first line after formula (C.34).
REPLACE
\[ \text{...where } f, h : [t, T] \times \mathbb{R} \times \Omega \to \mathbb{R} \text{ and } g : [t, T] \times \partial \Omega \times \Omega \to \mathbb{R} \text{ are...} \]
BY
\[ \text{...where } f : [t, T] \times \mathbb{R} \times \Omega \to \mathbb{R} \text{ and } h, g : [t, T] \times \partial \Omega \times \Omega \to \mathbb{R} \text{ are...} \]

4. Page 851, last two lines before formula (C.35).
REPLACE

So, defining as before \( b(s, y)(\cdot) := f(s, y(\cdot)) \) and \( [\sigma(s, y)z](\cdot) := h(s, y(\cdot))z(\cdot) \), we define the mild form of (C.34), for \( s \in [t, T] \), as

BY

We now define, as in Sections C.2 and C.3, \( b(s, y)(\cdot) := f(s, y(\cdot)) \) for \( s \in [t, T] \) and \( y \in H \). Moreover we define \( \sigma : [t, T] \to \mathcal{L}(\Lambda) \) as follows: for \( s \in [t, T] \) and \( z \in \Lambda \), \( [\sigma(s)z](\cdot) := h(s, \cdot)z(\cdot) \). We define the mild form of (C.34), for \( s \in [t, T] \), as

5. Last line of formula (C.35).
REPLACE
\[ ... G_N(\sigma(r, X(r))dW_Q(r) ... \]
BY
\[ ... G_N(\sigma(r)dW_Q(r) ... \]

REPLACE
\[ ... N_\lambda \sigma(s, X(s))dW_Q(s) ... \]
BY
\[ ... N_\lambda \sigma(s)dW_Q(s) ... \]

7. Page 852, the formula in the third line of Section C.5.
REPLACE
\[ ... G_D\sigma(r, X(r))dW_Q(r) ... \]
BY
\[ ... G_D\sigma(r)dW_Q(r) ... \]
   REPLACE
   ...\(h(s, (y(t, 0))\)...
   BY
   ...\(h(s)\)...

   REPLACE
   ...\(G_\eta \sigma(r, X(r))dW_Q(r)\)...
   BY
   ...\(G_\eta \sigma(r)dW(r)\)...

    REPLACE
    ...\(G_\eta \sigma(r, X(r))dW_Q(r)\)...
    BY
    ...\(G_\eta \sigma(r)dW(r)\)...

11. Page 853, the last line before formula (C.39) and the third line of formula (C.39).
    REPLACE
    \(L^2(t, T; \mathbb{R})\)
    BY
    \(L^2_\eta\)

APPENDIX D

   REPLACE
   \(f(b) - f(a)\)
   BY
   \(|f(b) - f(a)|_Y\)

   REPLACE
   \(f(b) - f(a) - (b - a)f'(t_0)\)
   BY
   \(|f(b) - f(a) - (b - a)f'(t_0)|_Y\)
REFERENCES

1. Page 891, Reference 391.
   REPLACE
   Gaussian Measures in Hilbert Spaces
   BY
   Gaussian Measures in Banach Spaces