VARIATIONAL ANALYSIS

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Errata as of August 2000

p.10, l.10 (pf 1.7): add at the end: (If $\bar{\alpha} = \infty$, we get $f(x^\nu) = \bar{\alpha}^\nu = \infty$ automatically.)

p.17, l.5 & l.15 (pf 1.17): replace '$(\text{lev}_{\leq\alpha} f) \times (\mathbb{R}^n \cap V)$' by '$(\text{lev}_{\leq\alpha} f) \cap (\mathbb{R}^n \times V)$'

p.19, l.18 (pf 1.21): '$r \in (0, \bar{x}]$' should be '$r \in [\bar{r}, \infty)$'

p.21, l.15 (pf 1.25): 'y' should be 'w'

p.25, l.15 (pf 1.28): 'E_i' should be '$\text{epi}\, f_i$'

p.31, l.-11 (pf 1.44): '$j_\lambda(x - w)$' instead of '$j_\lambda|x - w|^2$'

p.33, l.-9&-10 (pf 1.46): replace 'again at $a = \tilde{w} - z$' by 'this time at $a = \tilde{w}$'

p.34, l.-16: replace 'bicongugate' by 'biconjugate'

p.36, l.1: replace '$x \in X$' by '$u \in U$'

p.55, l.11 (pf 2.28): replace 'a_0 for $\nu \ldots$' by 'a_0^ν for $\nu \ldots$'

p.57, l.6 (pf 2.31): replace '$\tilde{\alpha} > \bar{\alpha}$' by '$\bar{\alpha} > \tilde{\alpha}$'

p.60, l.12 (pf 2.35): delete 'by 2.33'

p.70, l.5 (pf 2.50): replace '$l_{k_0}(x^*)$' by '$l_{i_0}(x^*)$'

p.86, l.7 (pf 3.15): after ')' insert ', only at 0'

p.93, l.1 (in 3.30): after 'when' insert '$\sup_{i \in I} f_i \not\equiv \infty$ and'

p.94, l.3 (in 3.33): '$f_2(w)$' should be '$f_2^\infty(w)$'

p.94, l.11 (pf 3.33): '$g^\infty(w, x) \leq$' should be '$g^\infty(w, x) \geq$'

p.94, l.12 (pf 3.33): delete '(a)' from 3.29(a)

p.97, l.5 (in 3.40): terminate this line with: ', except for the inf case in (e).'

p.100, l.19 (in 3.49): delete 'and $x = 0$'

p.110, l.-1 (in 4.2): 'cl' is superfluous in (c)

p.117, l.5 (in 4.12): add the assumption 'bounded with no subsequence escaping to the horizon', which guarantees in the proof that eventually $C^\nu \setminus B_\varepsilon$ isn't all of C^ν

p.118, l.3 (pf 4.13): replace '$|d_C(x) - d_C(x)|$' by '$|d_C(x) - d_D(x)|$'

p.130, l.-9 (pf 4.32): '$u_i \in Y$' should be '$u_i \in D$'

p.135, l.-12: '4.35' should be '4.36'

p.136, l.-4 (pf 4.37): the last 'dl_ρ' should be 'dl_{ρ_0}'

p.138, l.4 (pf 4.39): '$(1 - \bar{\tau}(|x_0| + x_1|)$' should be '$(1 - \bar{\tau}(|x_0| + |x_1|)$'

p.139, l.-3 (pf 4.42): '4.37(c)' should be '4.41(c)'

p.140, l.6 (pf 4.42): replace 'Corollary 4.11' by '4.42'

p.140, l.-9 (pf 4.44): '$R \subset K_2 + \eta\mathbb{B}$' should be '$R \not\subset K_2 + \eta\mathbb{B}$'

p.146, l.4: replace 'Corollary' by 'Example'

p.152, l.7: change to '$= \{u \mid \forall x^\nu \to \bar{x},\ \exists N \in \mathcal{N}_\infty, u^\nu \underset{N}{\to} u \text{ with } u^\nu \in S(x^\nu)\}$.'

p.164, l.9: replace '$\{0,\infty\}$' and '$\{0,-\infty\}$' by '$\{1,\infty\}$' and '$\{-\infty,1\}$', and in l.11 replace '$S(0)=\{0\}$' by '$S(0)=\{1\}$'

p.164, l.-11: 'x' should be '$\bar{x}$'

p.165, l.-13: replace 'the last assertion in 4.20' by '4.21(c)'

p.168, l.-9 (in 5.34): replace 'g-lim sup' by 'g-lim'

p.188, l.2 (in 5.56): replace ' $\rightrightarrows$ ' by '$\to$'

p.191, l.-7 (in 5.59): add the assumption 'X is closed'

p.194, l.-19: replace '[1995]' by '[1996]'

p.194, l.25–27: replace final sentence by: 'Theorem 5.37 has not been stated explicitly in the literature, but, except possibly for 5.37(b), has been part of the folklore.'

p.195, l.12: add: 'Example 5.57, finding selections by projection, is mentioned in : I. Ekeland and M. Valadier, Representation of set valued functions, J. Mathematical Analysis and Applications, 35 (1971), 621-629.'

p.204, l.15 (pf 6.9): '$\langle v^\nu, x-\bar{x}\rangle$' should be '$\langle v^\nu, x-x^\nu\rangle$'

p.210, l.-10 (pf 6.14): '$\lambda^\nu v=\nabla F(x^\nu)^* y^\nu+z^\nu$' should be '$\lambda^\nu v^\nu=\nabla F(x^\nu)^*\lambda^\nu y^\nu+\lambda^\nu z^\nu$'

p.215, l.-2: replace '$K_1^*\subset K_2^*$' by '$K_1^*\supset K_2^*$'

p.217, l.-9: replace 'equal well' by 'equally well'

p.220, l.7 (pf 6.27): '$-\langle w-\bar{w},\bar{w}\rangle$' should be '$-2\langle w-\bar{w},\bar{w}\rangle$'

p.225, l.8 (pf 6.37): replace '6.36(d)' by '6.36(c)'

p.226, l.3 (in 6.39): replace '6.41' by '6.14'

p.226, l.8 & l.16 & l.21 (in 6.39): '$+\nabla$' should be '$-\nabla$'

p.226, l.10 (in 6.39): '$-\tilde{w}$' should be '$\tilde{w}$'

p.235, l.-8: replace 'normal' by 'tangent'

p.236, l.-1: replace '[1984]' by '[1948]'

p.244, l.13 (in 7.4): replace '$\liminf_\nu[\operatorname{dom} f^\nu]$' by '$\limsup_\nu[\operatorname{dom} f^\nu]$'

p.244, l.-9: replace 'prox-regular' by 'prox-bounded'

p.245, l.10: replace 'f^ν' by '$f^\nu(x)$' and '$-(1/\nu)\log|t|$' by '$1/(\nu t)$'

p.251, l.3 (in 7.12): the display should read

$$f_{\wedge\rho}(x)=\begin{cases}-\rho & \text{if } f(x)\in[-\infty,-\rho),\\ f(x) & \text{if } f(x)\in[-\rho,\rho],\\ \rho & \text{if } f(x)\in(\rho,\infty].\end{cases}$$

p.253, l.-5 (pf 7.17): replace 'does not meet' by 'lies within'

p.253, l.-4 (pf 7.17): replace 'for all ν in the set' by 'for all $x\in C$ and ν in the set'

p.254, l.3 (pf 7.17): replace '$\mathcal{N}_\infty$' by '$\mathcal{N}_\infty^\#$'

p.255, l.3 (pf 7.19): replace 'ε' by '$-\varepsilon$' in two places

p.259, l.7 (in 7.23): 'function f' should be 'function h'

p.260, l.-1 (in 7.26): delete 'and positively homogeneously' (superfluous)

p.275, l.-8 (pf 7.46): '7(4)' should be '7(3)'

p.276, l.17: replace '$g+h\circ L$' by '$g\circ L+h$'

p.277, l.6: replace 'e-$\liminf_\nu f_2^\nu$' by 'e-$\limsup_\nu f_2^\nu$'

p.304, l.9 (pf 8.8): interchange '$\subset$' and '$\supset$'

p.305, l.9 (pf 8.9): '∂f' should be '$\widehat{\partial} f$'

p.305, l.19 (pf 8.9): replace '$\subset$' by '$\supset$'

p.305, l.-11&-10 (pf 8.9): replace 'in both cases $v^\nu \to v$' by 'in the first case $\lambda^\nu v^\nu \to v$, whereas in the second $v^\nu \to v$'

p.307, l.-4 (pf 8.11): '∂' should be '$\widehat{\partial}$'

p.310, l.20-22 (in 8.15): Without additional assumptions, it's incorrect that the tangent condition is necessary or that it implies the normal condition, but the normal condition is necessary nonetheless. Fix by interchanging the tangent cone display with the normal cone display and replacing the intervening 'which implies' by 'which in the case of C and f_0 also being regular at $\bar{x}$ is equivalent to having'. Further, replace the next sentence by: 'When f_0 and C are convex (hence regular), either condition is sufficient for $\bar{x}$ to be globally optimal, even if the constraint qualification is not fulfilled.'

p.311, l.2 (pf 8.15): T should be $\widehat{T}$ here; in l.4 insert '(with $\widehat{T} = T$)'

p.311, l.14 (pf 8.15): Add the sentence: 'In the convex case the sufficiency can also be seen directly from the characterizations in 6.9 and 8.12.'

p.311, l.15–20: Change this paragraph to read: 'Theorem 8.15 can be applied to a set C with constraint structure by way of formulas such as those in 6.14 and 6.31. The earlier result in 6.12 for smooth f_0 follows from 8.15 and the regularity of smooth functions (cf. 7.28 and 8.20(a))—only as long as C is regular at $\bar{x}$. For general C, however, and f_0 *semidifferentiable* at $\bar{x}$, the necessity of the tangent condition in 8.15 can be seen at once from the definitions of $T_C(\bar{x})$ in 6.1 and semidifferentiability in 7.20.'

p.315, l.-12 (in 8.22): '$\bar{w} \notin O$' should be '$\bar{w} \notin \operatorname{cl} O$'

p.316, l.18: replace '$x_2^2/|x_1|$' by '$x_2^2/2|x_1|$'

p.316, l.23: replace '$\pm(-x_2^2/x_1^2, 2x_2/x_1)$' by '$\pm(-x_2^2/2x_1^2, x_2/x_1)$'

p.316, l.-6: replace '$(\pm t^2, 2t)$' by '$(\pm t^2/2, t)$'

p.329, l.2: replace 'sublinear' by 'positively homogeneous'

p.329, l.12: add at the end of the sentence 'when H is sublinear'

p.336, l.11 (in 8.47): replace '$\bar{v}$' by '$\bar{v}'$'

p.337, l.11–13 (pf 8.49): change '$\widehat{\partial}$' to '$\widehat{d}$' in three places

p.339, l.6 (in 8.51): replace '$x \in I\!R$' by '$x \in I\!R^n$'

p.340, l.11: the expression for $df(\bar{x})(w)$ should read:

$$df(\bar{x})(w) = \begin{cases} f'_-(\bar{x})w & \text{for } w < 0, \\ f'_+(\bar{x})w & \text{for } w > 0, \\ 0 & \text{for } w = 0 \text{ if } f'_-(\bar{x}) < \infty \text{ and } f'_+(\bar{x}) > -\infty, \\ -\infty & \text{for } w = 0 \text{ if } f'_-(\bar{x}) = \infty \text{ or } f'_+(\bar{x}) = -\infty. \end{cases}$$

p.341, l.9 (pf 8.53): replace '4.7' by '4.8'

p.341, l.-5 (pf 8.53): on the right side of the inequality replace '$\tilde{x}$' by 'x^ν' twice

p.352, Fig.9–1: the slopes should get arbitrarily steep as $\bar{x}$ is approached

p.359, l.-15...-12 (pf 9.13): replace 'The maximum value, written as $\widehat{d}f(\bar{x})(\bar{w})$ for some $\bar{w}$ with $|\bar{w}| = 1$, is the limit of a certain sequence of difference quotients

$$\big[f(x^\nu + \tau^\nu w^\nu) - f(x^\nu)\big]/\tau^\nu \text{ with } x^\nu \to \bar{x},\ w^\nu \to \bar{w},\ \tau^\nu \searrow 0,'$$

by 'The value $\operatorname{lip} f(\bar{x})$, however, is the limit of a certain sequence of difference quotients

$$\big[f(x^\nu + \tau^\nu w^\nu) - f(x^\nu)\big]/\tau^\nu \text{ with } x^\nu \to \bar{x},\ w^\nu \to \bar{w},\ \tau^\nu \searrow 0$$

having $|\bar{w}| = 1$, which is not less that $\widehat{d}f(\bar{x})(\bar{w})$,'

p.368, l.11 (in 9.25): replace 'alos' by 'also'

p.372, l.8 (pf 9.29): '$<$' should be '$\leq$'

p.375, l.6 (pf 9.32): at the end of the line (before the comma) add '$+|a(x) - a(x')|$'

p.379, l.9 (pf 9.32): delete 'for $\bar{u}$'

p.383, l.-16&-15 (pf 9.40): replace 'and Lipschitz continuous around $(\bar{x}, \bar{u})$, a point at which it vanishes' by 'around $(\bar{x}, \bar{u})$, a point at which it vanishes and is calm.'

p.383, l.-10 (pf 9.40): replace '9(22)' by '9(23)'

p.385, Fig. 9–6: in the middle four cases the wrong side of the hyperplane is shaded

p.387, l.18 (9.43): '$D^*S^{-1}(\bar{x} \,|\, \bar{u})$' should be '$D^*S^{-1}(\bar{u} \,|\, \bar{x})$'

p.389, l.16 (pf 9.45): replace '$\bar{u} \in \operatorname{dom} S^{-1} = \operatorname{rge} S$' by '$\bar{u} \in \operatorname{int} \operatorname{dom} S^{-1} = \operatorname{int} \operatorname{rge} S$'

p.390, l.5 (pf 9.46): delete 'is' after 'certainly'

p.390, l.16 (pf 9.47): 'S^{-1}' should be 'S'

p.391, l.3 (pf (9.48): 'S^{-1}' should be '$S^{-1}(u)$'

p.393, l.-11 (pf 9.52): replace 'subdifferentiability' by 'semidifferentiability'

p.394, l.-6: replace '$S : I\!\!R \to I\!\!R$' by '$S : I\!\!R \rightrightarrows I\!\!R$'

p.395, l.10 (in 9.54): missing from this display is the companion inclusion $S(x) \cap W \subset S(x') + \varepsilon I\!\!B$ needed for a 'continuity' property

p.395, l.16 (in 9.54): for (b), S is supposed to be convex-valued. Through the localized continuity, this implies via 5.58 the existence around $\bar{x}$ of a continuous selection $s(x) \in S(x)$ with $s(\bar{x}) = \bar{u}$, which in the arguments for (b) then has to be a homeomorphism from a neighborhood of $\bar{x}$ onto a neighborhood of $\bar{u}$ by virtue of Brouwer's theorem.

p.395, l.-12 (pf 9.54): replace 'G' by '$\operatorname{gph} S$'

p.396, l.6 (pf 9.54): $T_{\operatorname{gph} S}(x, u)$ should have been $[\operatorname{gph} S - (x, u)]/\tau$

p.401, l.13 (pf 9.58): replace 'β' by '$\sqrt{\beta}$'

p.402, l.18 (pf 9.59): '$m = 1$' instead of '$n = 1$'

p.404, l.-17 (pf 9.61): '$\leq$' instead of '$\geq$'

p.407, l.20 (pf 9.65): replace '$D \setminus B$' by '$D \setminus E$'

p.407, l.-4 (pf 9.65): replace '$[-\lambda, \lambda]e$' by '$[-\lambda, \lambda]^n$'

p.409, l.16 (pf 9.67): '=1' instead of '=0'

p.409, l.-10 & l.-7 and p.410, l.1 (twice) & l.2 (pf 9.67): replace '$\mathcal{B}^n$' by 'B^ν'

p.410, l.-4 (pf 9.67): '$-2\langle x - \bar{x}, z^\nu \rangle$' instead of '$-\langle x - \bar{x}, z^\nu \rangle$'

p.411, l.8 (pf 9.67): '$-\frac{1}{2}\rho|x - \bar{x}|^2$' instead of '$+\frac{1}{2}\rho|x - \bar{x}|^2$'

p.411, l.10 (pf 9.67): twice replace '$\bar{v}+$' by '$\bar{v}-$'

p.411, l.15 (pf 9.67): The support function 'of' $\partial f(\bar{x}) \ldots$

p.411, l.19 (pf 9.67): '$\nabla f^\nu(x^\nu) \underset{N}{\to} \bar{v}$' instead of '$\nabla f^\nu(\bar{x}) \underset{N}{\to} v$'

p.412, l.17 (pf 9.67): add '$d\tilde{z}$' at the end of the last term

p.412, l.20 (pf 9.67): replace 'x^ν' by '$\bar{x}$'

p.416, l.-2&-1: replace 'the set $\partial f(\bar{x}) = \overline{\nabla} f(\bar{x})$' by 'either $\partial f(\bar{x})$ or $\overline{\nabla} f(\bar{x})$'

p.418, l.-6&-7: [1976b] should be [1976a] and vice versa

p.420, l.18: replace 'Mickel' by 'Mickle' p.422, l.12 (pf 10.1): replace 'This' by 'The subgradient condition'

p.424, l.-4 (pf 10.3): '$\bar{\alpha}$' should be '$\bar{x}$'

p.426, l.5: replace 'the quadrants $I\!R^2_+$ and $I\!R^2_-$' by 'two quadrants'

p.429, l.9 (in 10.8): 'N_D' should be '$\partial\theta$'

p.430, l.-10 (in 10.9): insert '=0' after the second v_m

p.436, l.-10 (in 10.16): '$f(\bar{x})$' should be '$f(\bar{x},\bar{u})$'

p.436, l.-6 (pf 10.16): '(v,β,y)' should be '(v,β,y)'

p.437, l.5&7&9 (in 10.17): '$\widehat{D}^*S(\bar{x}\,|\,\bar{u})(0)$' should be 'rge $\widehat{D}^*S(\bar{x}\,|\,\bar{u})$', and '$D^*S(\bar{x}\,|\,\bar{u})(0)$' should be 'rge $D^*S(\bar{x}\,|\,\bar{u})$'

p.437, l.-6&-5&-4 (in 10.18): replace the final $\bigcup$ by $\bigcap$ in each formula:

$$\begin{aligned}
\widehat{V}(\bar{x}) &= \bigcap_{(\bar{x}_1,\ldots,\bar{x}_m)\in P(\bar{x})} \; \bigcap_{i=1,\ldots,m} \widehat{\partial} f_i(\bar{x}_i),\\
V(\bar{x}) &= \bigcup_{(\bar{x}_1,\ldots,\bar{x}_m)\in P(\bar{x})} \; \bigcap_{i=1,\ldots,m} \partial f_i(\bar{x}_i),\\
V_\infty(\bar{x}) &= \bigcup_{(\bar{x}_1,\ldots,\bar{x}_m)\in P(\bar{x})} \; \bigcap_{i=1,\ldots,m} \partial^\infty f_i(\bar{x}_i).
\end{aligned}$$

p.438, l.1-2 (in 10.18): for this, the assumption is needed that f_i is regular at $\bar{x}_i$; moreover the second inequality should have the sup over $(\bar{x}_1,\ldots,\bar{x}_m)\in P(\bar{x})$ of the inf over $w_1+\cdots+w_m=w$ instead of the joint inf over both.

p.437, l.-3 (in 10.18): 'V_∞' should be '$V_\infty(\bar{x})$'

p.438, l.8 (pf 10.18): delete 'in (b)'

p.438, l.-12: in last line of 10(6) replace '∂f' by '$\partial^\infty f$'

p.439, l.-6 (pf 10.19): 'i.e.' should be 'e.g.'

p.441, l.14 (pf 10.21): replace 'T_{C_k}' by '$T_{C_k}(\bar{x})$'

p.442, l.-9: replace '$g : I\!R^m$' by $g : I\!R^m \to \overline{I\!R}$'

p.445, l.-15 (in 10.26): '$x-u$' should be '$x-w$' here and in line 5 of the next page

p.447, l.9 (in 10.27): 'dF' should be 'DF'

p.447, l.16 (pf 10.27): '7.30' should be '7.27'

p.448, l.-10 (pf 10.31): the proof neglects to address this formula, but it's evident from the one for $df(\bar{x})$ and the fact that $d(-f)(\bar{x})=-df(\bar{x})$ under semidifferentiability

p.449, l.-12 (pf 10.31): the initial '=' in this line should be '$\leq$'

p.450, l.-3 (pf 10.33): the final N_{C_m} should be T_{C_m}

p.451, l.7 (pf 10.33): '$\langle x,w\rangle$' should be '$\rho\langle x,w\rangle$'

p.452, l.-4 (in 10.37): replace S_1 and S_2^{-1} by S_2 and S_1^{-1} respectively

p.453, l.13 (pf 10.37): $\operatorname{gph} S_1$ and $\operatorname{gph} S_2$ should be $N_{\operatorname{gph} S_1}$ and $N_{\operatorname{gph} S_2}$; also, delete 'the union of' just before this display and delete 'over all $\bar{w}\in S_1(\bar{x})\cap S_2^{-1}(\bar{u})$' just after

p.454, l.1 (in 10.38): insert 'at' before 'every'

p.454, l.5 (pf 10.38): each '$|\cdot|$' should be '$|\cdot|^+$'

p.454, l.-12 (pf 10.39): after 'Theorem 10.37' insert 'and Corollary 10.38'; likewise in the next line p.455, l.18&22 (pf 10.40): replace '$\langle z, \nabla F(\bar{x})(x-\bar{x})\rangle$' by '$\langle v,\, x-\bar{x}\rangle$'; delete l.23-24 and insert 'Thus' at the beginning of the line that follows

p.455, l.-4&-3 (pf 10.40): after 'at $F(\bar{x})$ insert 'for $\bar{u}$', and twice replace $\Delta_\tau S_0(F(\bar{x}))$ by $\Delta_\tau S_0(F(\bar{x})\,|\,\bar{u})$; this replacement also on p.456, l.3

p.457, l.15 (pf 10.42): each $|\cdot|_+$ should be $|\cdot|^+$

p.461, l.15&16 (pf 10.48): replace '$\langle v,\, x_1-x_0\rangle$' by '$\langle v,\, x_1-x_0\rangle + f(x_0) - f(x_1)$'

p.462, l.5 (in 10.49): reverse: g regular at $F(\bar{x})$ and yF regular at $\bar{x}$

p.462, l.12 (pf 10.49): the second '$g(F(x))$' should be '$g(F(\bar{x}))$'

p.463, l.2 (in 10.50): '∂^∞' should be '$\widehat{\partial}$'

p.464, l.-14 (in 10.53): '$D^*S_0(F(\bar{x})\,|\,\bar{u})\circ D^*F(\bar{x})$' should be '$D^*F(\bar{x})\circ D^*S_0(F(\bar{x})\,|\,\bar{u})$'; a constraint qualification is needed as well, but actually this exercise duplicates the last part of 10.40 and therefore is redundant

p.465, l.13 (pf 10.55): 'β_1' should be 'β^2'

p.467, l.9&10 (pf 10.56): change '$h(w-x)'$ to '$h(x-w)'$ and, in the next line, 'x' to '$\bar{x}$'

p.467, l.16&17 (pf 10.56): in the first two lines successively change $=, \leq, \leq,$ to $\geq, =, \geq$; then in the third line change 'max' to 'min'

p.469, l.6 (pf 10.58): insert 'on' after 'continuously'

p.477, l.-2 (pf 11.5): 'b' should be 'v'

p.482, l.13: '$-f^*(0)$' should be '$2f^*(0)$'

p.487, l.-4 (pf 11.14): '$\mathrm{gph}\,\partial f(x)$' should be '$\mathrm{gph}\,\partial f$'

p.495, l.3&4 (in 11.24): '$\mathrm{dom}\, g$' should be 'D' twice

p.497, l.20 (pf 11.29): '$C_1 \cap \mathrm{int}\, C_2$' should be '$C_2 \cap \mathrm{int}\, C_1$'

p.521, l.8 (in 11.57): 'u' should be '$F(x)$'

p.523, l.-7 (pf 11.60): '$(\bar{r}, 0)$' should be '$(\bar{r}, \infty)$'

p.536, l.7 (in 12.8): missing after 'all $\tau \in (0,1)$' is 'and all $(x,v) \in \mathrm{gph}\, T$'

p.542, l.-7 (pf 12.17): merely assume that f is prox-bounded (with threshold $\lambda_f > 0$); in the next paragraph, such prox-boundedness will follow from the conclusion that f is convex

p.543, l.15 (pf 12.17): '12.4(b)' should be '12.4(c)'; also, this proof neglects to cover the final assertion of the theorem, but that is easily justified from the definitions and the inequality argument in the initial paragraph

p.553, l.-7 (pf 12.38): 'sequence' should be 'sequences'

p.554, l.17 (pf 12.40): add 'by showing that $\limsup_{x\to\bar{x},\, \nu\to\infty} d(0, T^\nu(x)) < \infty$' to the end of the first sentence, as dictated by the above fix in 5.34(b). Showing this isn't easy, however, as an "exercise"; for details see T. Pennanen, M. Théra and R.T. Rockafellar, *Convergence of sums of monotone mappings*, Proc. Amer. Math. Soc.

p.554, l.-5 (pf 12.41): choose V also to be open

p.555, l.8 (pf 12.41): delete 'from'

p.556, l.12: 'almost convex' should be 'nearly convex'

p.561, l.-14 (pf 12.51): 'almost convex' should be 'nearly convex'

p.567, l.-9 (pf 12.63): '$\mathcal{N}_\infty$' should be '$\mathcal{N}_\infty^\#$'; likewise p.568, l.9

p.571, l.16 (pf 12.67): 'single-valued' should be 'continuous'

p.572, l.-13 (pf 12.67): '$\mathrm{dir}\, w$' should be '$\mathrm{dir}\, \bar{w}$

p.572, l.-3: '12.63(b)' should be '12.63(c)' p.592, l.-11&13 (pf 13.12): 'w' is missing after '$+\tau^\nu$', and two lines later '$T^2_C(\bar{x})$' should be '$T^2_C(\bar{x}\,|\,w)$'

p.593, l.-10 (pf 13.13): '$T_C(F(\bar{x}))$' should be '$T_D(F(\bar{x}))$'

p.600, l.-15 (pf 13.14): '$F(\bar{x})$' should be '$F(x)$'

p.604, l.-2&-1 (pf 13.21): replace 'e-lim' by 'e-liminf' twice

p.607, l.19 (pf 13.24): replace 'when $|x-\bar{x}|^2$' by 'when $|x-\bar{x}| \leq \delta$'

p.616, l.21 (pf 13.36): '$1/2\lambda$' should be '$1/\lambda$'

p.619, l.-11&-10 (pf 13.40): '$\Delta^2_\tau f(0\,|\,0)$', '$d^2 f(0\,|\,0)$', should be '$\frac{1}{2}\Delta^2_\tau f(0\,|\,0)$', '$\frac{1}{2}d^2 f(0\,|\,0)$'

p.619, l.-6 (pf 13.40): '$\Delta_\tau f(0\,|\,0)$' should be '$\Delta_\tau(\partial f)(0\,|\,0)$'

p.626, l.-17 (in 13.50): delete 'the' after 'of'

p.626, l.-16&-15 (in 13.50): '$\nabla(yF)$' should be '$\nabla^2(yF)$' twice

p.630, l.12 (in 13.55): '$\overline{\nabla} f(\bar{x})$' should be '$\overline{\nabla}^2 f(\bar{x})$'

p.645, l.13 (pf 14.3): '(h)' should be '(j)'

p.648, l.-9 (pf 14.8): should be $\bigcap_{0<\rho\in\mathbb{Q}} \bigcup_{a\in\mathbb{Q}^n}$

p.650, l.-2 (pf 14.10): '$\operatorname{dom} D$' should be '$\operatorname{dom} S$'

p.652, l.-9 (pf 14.11): '$S(t)$' should be '$S_j(t)$'

p.663, l.13 (pf 14.32): '$\mathbb{R}_+$' should simply be '$\mathbb{R}$'

p.663, l.-4 (pf 14.33): 'α' should be '$\alpha(t)$'

p.664, l.7 (in 14.34): '$\mathcal{A}(\mathbb{R}^d)$' should be '$\mathcal{A}(T)$'

p.664, l.-11 (pf 14.36): 'i_2' should be 'I_2'

p.666, l.17 (pf 14.39): 'ν' should be 'ν, β' in three places

p.666, l.24 (pf 14.39): 't ensure' should be 'x ensure'

p.727 (index): under 'cosmic metric,' the second page indication should be 150

p.731 (index): add lines: (1) 'Pasch-Hausdorff envelopes, 296, 357+, 420, 665', (2) 'proximal subgradients: see subgradients', (3) 'rough convergence, 145'

Please report any typos to: *rjbwets@ucdavis.edu*.