Errata for ‘Proximal Algorithms’
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1. On page 156 (§4.4.1), there is a typo in the fifth equation on the page, a z-update. The penalty term should be
\[(\rho/2)\|x^{k+1} - z + (1/\rho)y^k\|_2^2,\]
i.e., there is a sign error on the last term. (Thanks to Panagiotis Patrinos.)

2. On page 166, there is a sign error in Equation 5.9. The x-update should be
\[x_i^{k+1} := \text{prox}_{f_i}(\bar{x}_i^k - u_i^k),\]
just as in Equation 5.6. (Thanks to Thomas Möllenhoff.)

3. On page 176, the last term in the Hessian of \(f\) should be \(\text{diag}(\phi_i''(x_i))\) rather than what is written there, since it should involve the second derivatives of the \(\phi_i\) functions. (Thanks to Zoltan Szabo.)

4. On page 178 (§6.1.4), the paper states the following: “In general, when \(v\) is not in \(\text{dom } f\), \(\text{prox}_{\lambda f}(v) = \Pi_{\text{dom } f}(v).\)” This is false. For example, if
\[f(x) = \begin{cases} (x - 1)^2 & x \geq 0 \\ \infty & x < 0, \end{cases}\]
then \(\text{prox}_f(-1) \neq 0\). The method can be adjusted accordingly. (Thanks to Petter Strandmark.)

5. On page 180 (§6.2.1), Equation 6.5 erroneously refers to \(\lambda^*\) and \(\eta^*\) when the dual optimal points should be \(\nu^*\) and \(\eta^*\) to be consistent with the definition of the dual function. Equation 6.5 should instead be
\[x^* = v - A^T\nu^* - C^T\eta^*.\]
(Thanks to Zoltan Szabo.)

6. On page 181 (§6.2.1), the definition of the dual QP in terms of the Gram matrix \(G\) should be
\[
\begin{align*}
\text{minimize} & \quad (-1/2)(\nu, \eta)^T(GG^T)(\nu, \eta) + (Gv - (b, d))^T(\nu, \eta) \\
\text{subject to} & \quad \eta \geq 0
\end{align*}
\]
to be consistent with the dual problem at the top of page 180. Explicitly, there is a missing factor of \((-1/2)\) in the first term and the second term should have \(Gv\) replaced with \(Gv - (b, d)\). (Thanks to Zoltan Szabo.)

7. On page 183, the example in the last paragraph of §6.3 should state that if \(-v \in K^*\), then \(\Pi_K(v) = 0\); there is a missing negative sign in the condition. In words, the negative dual cone gets projected to zero. (Thanks to Zoltan Szabo.)

8. On page 186, the lower bound of the initial search interval for bisection should be \(\min_i v_i - (\lambda/n)\), not \(\min_i v_i - (1/n)\). (Thanks to Zoltan Szabo.)
9. On page 194 (§6.7.4), Equation 6.14 should read

$$\Pi_{g}(A) = \sum_{i=1}^{n} \Pi_{[-1,1]}(d_i) u_i u_i^T,$$

because the eigenvalues $d_i$ of $A$ could be negative, and they are being projected onto the $\ell_{\infty}$ ball $[-1,1]$. Equation 6.14 as stated in the paper is inconsistent with the English description in the text and the rest of the section. (Thanks to Zoltan Szabo.)