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CORRECTION

Correction to: A self-adaptive three-term conjugate gradient method for monotone nonlinear equations with convex constraints

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Note that inequality (9) in the Original Article is incorrect. In fact, by Cauchy–Schwarz Inequality, we have

$$\left|F(x_k)^T y_{k-1}\right| \leq \|F(x_k)\|\|y_{k-1}\|, \quad \text{and} \quad \left|F(x_k)^T d_{k-1}\right| \leq \|F(x_k)\|\|d_{k-1}\|,$$

which implies that

$$\begin{aligned} &|\frac{F(x_k)^T y_{k-1}}{d_{k-1}^T y_{k-1}}|\|d_{k-1}\| + |\frac{F(x_k)^T d_{k-1}}{d_{k-1}^T y_{k-1}}|\|y_{k-1}\| \\ &\leq \frac{||F(x_k)||||y_{k-1}||}{|d_{k-1}^T y_{k-1}|}\|d_{k-1}\| + \frac{\|F(x_k)\|\|d_{k-1}\|}{|d_{k-1}^T y_{k-1}|}\|y_{k-1}\|. \end{aligned}$$

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By Cauchy–Schwarz Inequality again, we have

$$|d_{k-1}^T y_{k-1}| \leq \|d_{k-1}\| \|y_{k-1}\|,$$

which means that

$$\frac{||F(x_k)||||y_{k-1}||}{|d_{k-1}^T y_{k-1}|}\|d_{k-1}\| + \frac{\|F(x_k)\|\|d_{k-1}\|}{|d_{k-1}^T y_{k-1}|}\|y_{k-1}\| \geq 2\|F(x_k)\|.$$

Then we have inequality (9) in the Original Article is incorrect, that is

$$\|F(x_k)\| + \left|\frac{F(x_k)^T y_{k-1}}{d_{k-1}^T y_{k-1}}\right|\|d_{k-1}\| + \left|\frac{F(x_k)^T d_{k-1}}{d_{k-1}^T y_{k-1}}\right|\|y_{k-1}\| \leq 3\|F(x_k)\|$$

is incorrect. Then Remark 2.1 in the Original Article should be modified in the following way:

Remark 2.1 (2) and (3) in the Original Article imply that

$$F(x_k)^T d_k = -\|F(x_k)\|^2.$$

By Cauchy–Schwarz inequality, we have

$$\|F(x_k)\| \leq \|d_k\|,$$

which means that terminates condition $\|F(x_k)\| = 0$ in Algorithm 2.1 in the Original Article can be implied by $\|d_k\| = 0$. Therefore, the terminates condition $\|F(x_k)\| = 0$ in Algorithm 2.1 in the Original Article can be replaced by $\|d_k\| = 0$.

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