

# Erratum: Minimum volume enclosing ellipsoids and core sets

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## Abstract

We present the corrected version of equation number (47) in the paper *Minimum volume enclosing ellipsoids and core sets* by the authors that was published in *Journal of Optimization Theory in Applications* in Volume 126 Number 1, pages 1–21.

## 1 Correction to Equation (47)

The corrected version of the equation (47) in the published manuscript is as follows:

$$\begin{aligned}(Q^{i+1})^{-1} &= d [PU^{i+1}P^T - c^{i+1}(c^{i+1})^T], \\ &= d [(1 - \beta^i)PU^iP^T + \beta^i p^j (p^j)^T - ((1 - \beta^i)c^i + \beta^i p^j) ((1 - \beta^i)c^i + \beta^i p^j)^T], \\ &= d [(1 - \beta^i)PU^iP^T + \beta^i(1 - \beta^i)p^j (p^j)^T - (1 - \beta^i)^2 c^i (c^i)^T \\ &\quad - \beta^i(1 - \beta^i)c^i (p^j)^T - \beta^i(1 - \beta^i)p^j (c^i)^T], \\ &= d(1 - \beta^i) [PU^iP^T + \beta^i p^j (p^j)^T - (1 - \beta^i)c^i (c^i)^T - \beta^i c^i (p^j)^T - \beta^i p^j (c^i)^T], \\ &= d(1 - \beta^i) [PU^iP^T - c^i (c^i)^T + \beta^i (p^j - c^i)(p^j - c^i)^T], \\ &= (1 - \beta^i)(Q^i)^{-1} + d(1 - \beta^i)\beta^i (p^j - c^i)(p^j - c^i)^T,\end{aligned}$$

where we used  $Pu^i = c^i$ ,  $u^{i+1} = (1 - \beta^i)u^i + \beta^i e^j$ ,  $c^{i+1} = (1 - \beta^i)c^i + \beta^i p^j$ , and  $(Q^i)^{-1} = d(PU^iP^T - c^i(c^i)^T)$ ,  $i = 0, 1, \dots$

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