Proceedings of the Institution of Civil Engineers
Geotechnical Engineering 155
October 2002 Issue 4
Pages 259–259

Paper 2212285

Paper published
Proc. Instn Civ. Engrs Geotech. Engng, 2002, **155**, April, 119–131

Discussion

Active and passive earth pressure coefficients by a kinematical approach

A.-H Soubra and B. Macuh

J. Dale, *Consulting Engineer*

I have studied the paper by Soubra and Macuh with interest and tried to implement a spreadsheet to generate the same results as given in their paper.

I find that there are differences between the formulae given in the text of the paper and Appendix 1, and the visual Basic code in Appendix 2. Eqtns 20 and 28 for example include $\mu 3$ in the exponent whereas the visual basic code does not. Symbol μ is not defined in the paper. The signs given in eqtns 10 and 11 also differ from the code implementation. Could the authors advise corrections to the paper that would enable their published results to be independently verified.

Author's response

The author appreciates the contribution by Mr Dale. In fact, the contribution concerns some typographical errors that appeared in the paper. The following corrections should be made to the original paper and should answer Mr Dale's queries.

Equations 10–12 and 20, 23 and 28 should read:

10
$$K_{a\gamma} = K_{p\gamma} = -\frac{2}{\left(\frac{l}{r_0}\right)^2} \cdot \frac{(f_1 - f_2 - f_3)}{f_4}$$

11
$$K_{aq} = K_{pq} = -\frac{1}{\frac{l}{r_0}} \cdot \frac{f_6}{f_4}$$

12
$$K_{ac,pc} = \mp \frac{1}{\frac{l}{r_0}} \frac{f_7 - f_5}{f_4}$$

20
$$f_1 = \pm \left[\frac{\mp e^{\mp 3(\theta_1 - \theta_0)\tan\phi} (3\tan\phi \cdot \sin\theta_1 \pm \cos\theta_1) \pm 3\tan\phi \cdot \sin\theta_0 + \cos\theta_0}{3(9\tan^2\phi + 1)} \right]$$

23
$$f_4 = \begin{cases} \cos(\delta \pm \lambda)\left(\cos\theta_0 - \frac{1}{3}\frac{l}{r_0}\cos\lambda\right) \pm \sin(\delta \pm \lambda) \\ \qquad \left(\sin\theta_0 - \frac{1}{3}\frac{l}{r_0}\sin\lambda\right) \quad \textit{for } K_\gamma \\ \cos(\delta \pm \lambda)\left(\cos\theta_0 - \frac{1}{2}\frac{l}{r_0}\cos\lambda\right) \pm \sin(\delta \pm \lambda) \\ \qquad \left(\sin\theta_0 - \frac{1}{2}\frac{l}{r_0}\sin\lambda\right) \quad \textit{for } K_q, K_{q0} \textit{ and } K_c \end{cases}.$$

28
$$\frac{L}{r_0} = \frac{e^{\mp(\theta - \theta_0)\tan\phi}(\sin\theta_1 - \cos\theta_1 \cdot \tan\lambda)}{-\sin\theta_0 + \cos\theta_0 \cdot \tan\lambda} \Big/ \sin\beta \cdot \tan\lambda + \cos\beta$$