3212 Corrigenda

$$
\hat{\mathbf{n}}^{+} = \mathbf{Q}\hat{\mathbf{n}}, \quad (\hat{\mathbf{k}}^{2})^{+} = \mathbf{Q}\hat{\mathbf{k}}^{a}, \quad (\hat{\mathbf{m}}^{2})^{+} = \mathbf{Q}\hat{\mathbf{m}}^{a}.
$$
 (C.2)

For constrained theories, (C.2) does not imply eqns (13) and (14). In addition, the properly invariant theory needs to be modified in a manner that is easily inferred from Section 4 of O'Reilly and Turcotte (1996). However, for an unconstrained theory, (C.2) is identical to eqn (12), and eqn (14) also holds. Finally, as an unconstrained theory was used in the examples discussed in our paper, the corrections reported here have no effect on them.

Also, eqn (9) should read

$$
\mathbf{n} = \frac{\partial \Phi}{\partial y_{3k}} \mathbf{d}_k + \frac{\partial \Phi}{\partial \kappa_{33}} \mathbf{d}'_{\alpha}, \quad \mathbf{m}^{\alpha} = \frac{\partial \Phi}{\partial \kappa_{\alpha k}} \mathbf{d}_k, \quad \mathbf{k}^{\alpha} = \frac{\partial \Phi}{\partial y_{\alpha k}} + \frac{\partial \Phi}{\partial \kappa_{\beta \alpha}} \mathbf{d}'_{\beta}
$$

## REFERENCES

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O'Reilly, O. M. and Turcotte, J. S. (\996). Some remarks on invariance requirements for constrained rods. *Mathematics and Mechanics of Solids* 1, 343-348.

A. E. Giannakopoulos and S. Suresh, Indentation ofsolids with gradients in elastic properties: Part I. Point force. *Int.* 1. *Solids Structures,* Vol. 34, No. 19, pp. 2357-2392,1997; and A. E. Giannakopoulos and S. Suresh, Indentation of solids with gradients in elastic properties: Part II. Axisymmetric indenters. *Int.* 1. *Solids Structures,* Vol. 34, No. 19, pp. 2393-2428, 1997.

A reference to L. N. Ter-Mkrtich'ian, Some problems in the theory of elasticity of nonhomogeneous elastic media. *PMM,* Vol. 25, pp. 1120-1125, 1961, which is from the Russian Literature, was inadvertently left out from the above two-part paper published recently in this journal. This was brought to our attention by Prof. Bertil Storakers of the Royal Institute of Technology, Stockholm, Sweden, to whom we are grateful. In this paper by Ter-Mkrtich'ian, mathematical formulations for the axisymmetric indentation of an elastic half-space with exponential variations in Young's modulus normal to the indented surface were treated, by recourse to Love's displacement potential and Sneddon's Hankel transform (see our two-part paper for appropriate references for these methods). The theoretical results for the exponential model reported in the initial steps of the derivation in Part 1 of our two-part paper match the earlier results of Ter-Mkrtich'ian. Full solutions for the particular case of a point force and, the surface vertical displacement, *w(r),* were not presented by Ter-Mkrtich'ian; these can be found in Part I. The stresses were also formulated in Ter-Mkrtich'ian (1961) in a manner which was not amenable for direct quantification. Equation (2.16) of Ter-Mkrtich'ian (1961) apparently contains an error; the correct form is presented in eqn (41) of Part I.

We have reported, in our aforementioned two-part paper, explicit analytical solutions for the force-indenter penetration and force-contact radius relations, as well as for the stress fields for the point force and axisymmetric indenters, in such a way that the predictions can be compared directly with experimental observations. In addition, new models for powerlaw spatial variation in Young's modulus and complete finite-element analyses for both the exponential and power-law models were presented in our two-part paper.