# Reply to comments by C.-F. Gao on "General solutions for thermopiezoelectrics with various holes under thermal loading"
# [Int. J. Solids Struct. 37 (2000) 5561–5578]

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In the comments on the paper by Qin (2000), Gao made four main arguments. But only the first two arguments need to be discussed. The remaining two may stem from misconceptions of the reader, which has led to an unreasonable conclusion. Moreover, there is also lack of theoretical support for the remaining two arguments.

It should be admitted that there is a print error for mapping function (Eq. (3) in Qin (2000)) mentioned by Gao:

$$x_1(\psi) = a(\cos\psi + \gamma e_{m1}\cos m\psi), \qquad x_2(\psi) = a(e\sin\psi - \gamma e_{m1}\sin m\psi) \qquad (1)$$

The correct one should be

$$x_1(\psi) = a(\cos\psi + \gamma e_{m1}\cos m\psi), \qquad x_2(\psi) = ae(\sin\psi - \gamma e_{m1}\sin m\psi) \qquad (2)$$

Eq. (2) above is now correct and consistent with that of Hwu (1990).

For the second argument from Gao about multi-value problem of the mapping function, we have discussed this in detail in Section 2 of the paper. As was said in abstract, we have indeed presented a simple approach to handle this problem. Our conclusion is that the root whose magnitude has a minimum value among the $m$-roots should be chosen.

## References

Qin, Q.H., 2000. General solutions for thermopiezoelectrics with various holes under thermal loading. Int. J. Solids Struct. 37, 5561–5578.

Hwu, C., 1990. Anisotropic plates with various openings under uniform loading or pure bending. J. Appl. Mech. 57, 700–706.

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