 Proceedings of ICCES'08, pp.1167-1167

# An Inverse Approach to Determine the Mechanical Properties of Elastoplastic Materials Using Indentation Tests

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## Summary

In the present paper, an inverse approach to determine Young's modulus, yield strength and the strain hardening exponent of power law engineering materials from depth-sensing instrumented indentation tests were proposed. Numerical experiments performed on typical engineering metals demonstrated the good performance of the new method. The sensitivity of the method to data errors together with some experimental uncertainties was also discussed, which may provide useful information for the application of the method in practice.

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