

Acta Mechanica Sinica » 2011, Vol. 27 » Issue (5) :697-705 DOI:

Research Papers
[Current Issue](#) | [Next Issue](#) | [Archive](#) | [Adv Search](#)
[<< Previous Articles](#) | [Next Articles >>](#)

Formulations of a hydromechanical interface element

Z.-Z. Fu

Conservancy and Hydropower Engineering, Hohai University, 210098 Nanjing, China

Abstract

Reference

Related Articles

Download: [PDF \(615KB\)](#) [HTML \(1KB\)](#) **Export:** [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

Abstract A hydromechanical interface element is proposed for the consideration of the hydraulic-mechanical coupling effect along the interface. The fully coupled governing equations and the relevant finite element formulations are derived in detail for the interface element. All the involved matrices are of the same form as those of a solid element, which makes the incorporation of the model into a finite element program straightforward. Three examples are then numerically simulated using the interface element. Reasonable results confirm the correctness of the proposed model and motivate its application in hydromechanical contact problems in the future.

Keywords:

Received 2010-08-20; published 2011-09-27

Corresponding Authors: Z.-Z. Fu **Email:** fu_zhongzhi@yahoo.com**Cite this article:**

Z.-Z. Fu. Formulations of a hydromechanical interface element[J] Acta Mechanica Sinica, 2011, V27(5): 697-705

Service

- ▶ [Email this article](#)
- ▶ [Add to my bookshelf](#)
- ▶ [Add to citation manager](#)
- ▶ [Email Alert](#)
- ▶ **RSS**

Articles by authors

- ▶ [FU Zhong-Zhi](#)