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C-eigenvalue inclusion theorems for Piezoelectric-type tensors *

Haitao Che [†] Haibin Chen [‡] Yiju Wang [§]

Abstract

C-eigenvalues and C-eigenvectors of piezoelectric-type tensors play an important role in piezoelectric effect and converse piezoelectric effect. In this article, with the help of components of C-eigenvectors, we present three inclusion theorems to locate all C-eigenvalues for a given piezoelectric-type tensor. Finally, numerical examples are reported to be tighter than the S-partition method presented by Li *et al.* [32].

Keywords: C-eigenvalue, C-eigenvector, Piezoelectric-type tensors, localization theorem

AMS subject classification: 12E10; 15A18; 75A99

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