

Abstract

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by

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For all  $\alpha \in \mathbb{R}$ , let  $\mathcal{L}_\alpha$  be the set of all  $\lambda \in \mathbb{C}$  such that  $\lambda^\alpha = 1$ . For all  $\alpha \in \mathbb{R}$ , let  $\mathcal{L}_\alpha$  be the set of all  $\lambda \in \mathbb{C}$  such that  $\lambda^\alpha = 1$ .

independently of  $\alpha$ . In this paper, we study the eigenvalues of the matrix  $A_\alpha$  and show that most of the eigenvalues can be determined explicitly. In particular, we show that the eigenvalues of  $A_\alpha$  are the  $\alpha$ -th roots of unity.

1. INTRODUCTION

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