

1146-15-498

Colin M Garnett* (colin.garnett@bhsu.edu). *The Search for Non-Sparse Companion Matrices.*

This talk will include a brief introduction to the idea of companion matrices that generalizes the well known Frobenius companion matrix. The Frobenius companion matrix contains $2n - 1$ nonzero entries and cannot contain fewer nonzero entries and as such is considered sparse. In this talk we will discuss the search for non-sparse companion matrices and give several examples as well as a few properties that all companion matrices must satisfy. (Received January 29, 2019)