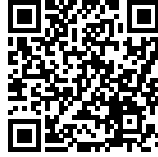


THE METHOD OF DEFLATION

http://www.phys.uconn.edu/~rozman/Courses/m3511_20s/



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$$A \mathbf{v}_i = \lambda_i \mathbf{v}_i, \quad \|\mathbf{v}_i\| = \sqrt{\mathbf{v}_i^t \mathbf{v}_i} = 1, \quad \mathbf{v}_i^t \mathbf{v}_j = 0, \quad i \neq j. \quad (1)$$

$$B = A - \lambda_1 \mathbf{v}_1 \cdot \mathbf{v}_1^t \quad (2)$$

$$B \mathbf{v}_1 = (A - \lambda_1 \mathbf{v}_1 \cdot \mathbf{v}_1^t) \mathbf{v}_1 = A \mathbf{v}_1 - \lambda_1 \mathbf{v}_1 (\mathbf{v}_1^t \mathbf{v}_1) = \lambda_1 \mathbf{v}_1 - \lambda_1 \mathbf{v}_1 = 0 \mathbf{v}_1 \quad (3)$$

$$\boxed{B \mathbf{v}_1 = 0 \mathbf{v}_1} \quad (4)$$

$$B \mathbf{v}_i = (A - \lambda_1 \mathbf{v}_1 \cdot \mathbf{v}_1^t) \mathbf{v}_i = A \mathbf{v}_i - \lambda_1 \mathbf{v}_1 (\mathbf{v}_1^t \mathbf{v}_i) = \lambda_i \mathbf{v}_i - 0 \mathbf{v}_1 = \lambda_i \mathbf{v}_i, \quad i \neq 1. \quad (5)$$

$$\boxed{B \mathbf{v}_i = \lambda_i \mathbf{v}_i} \quad i \neq 1. \quad (6)$$