Project 2 FYS4150

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Abstract

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Intro
V Teori
K Metode Algorigmer: Jacobi, rhomax, unittests valg av epsilon ("0")
Resultat 1b (2 tab): N, lambda jacboi, N, lambda arma kommentar: lambda svarer til energi ... 1e (tab) omega, lambda, E tid tab: time (N, Jacobi v armadillo, Similarity transforms (iterations))
Diskusjon
Konklusjon
Program:
Kjetil: Armadillo tid, konvergenshastighet (1b),
plot: tid v N (armadillo, jacobi) - for 1b similiraty transforms v N

Table 0.1: This is a table listing the computing time for each algorithm. The LU algorithm was only possible to do up till $n = 1e4$ and the entry of 0 s means that this algorithm did not compute anything for the given value of n

ω_r	E_0 (eV)	E_1 (eV)	E_2 (eV)
0.01	2.86223	3.77149	4.63048
0.5	177.648	685.031	1534.29
1	687.75	2725.43	6125.19
5	17010.9	68018.2	153034

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2 Theory

$$\mathbf{w}_i = \mathbf{U}\mathbf{v}_i \tag{1}$$
$$\mathbf{w}_i^T \mathbf{w}_j = (\mathbf{U}\mathbf{v}_i)^T \mathbf{U}\mathbf{v}_j \tag{2}$$
$$= \mathbf{v}_i^T \mathbf{U}^T \mathbf{U}\mathbf{v}_j \tag{3}$$
$$= \mathbf{v}_i^T \mathbf{v}_j = \delta_{ij} \tag{4}$$

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3 Method

4 Result

5 Discussion

6 Conclusion

References