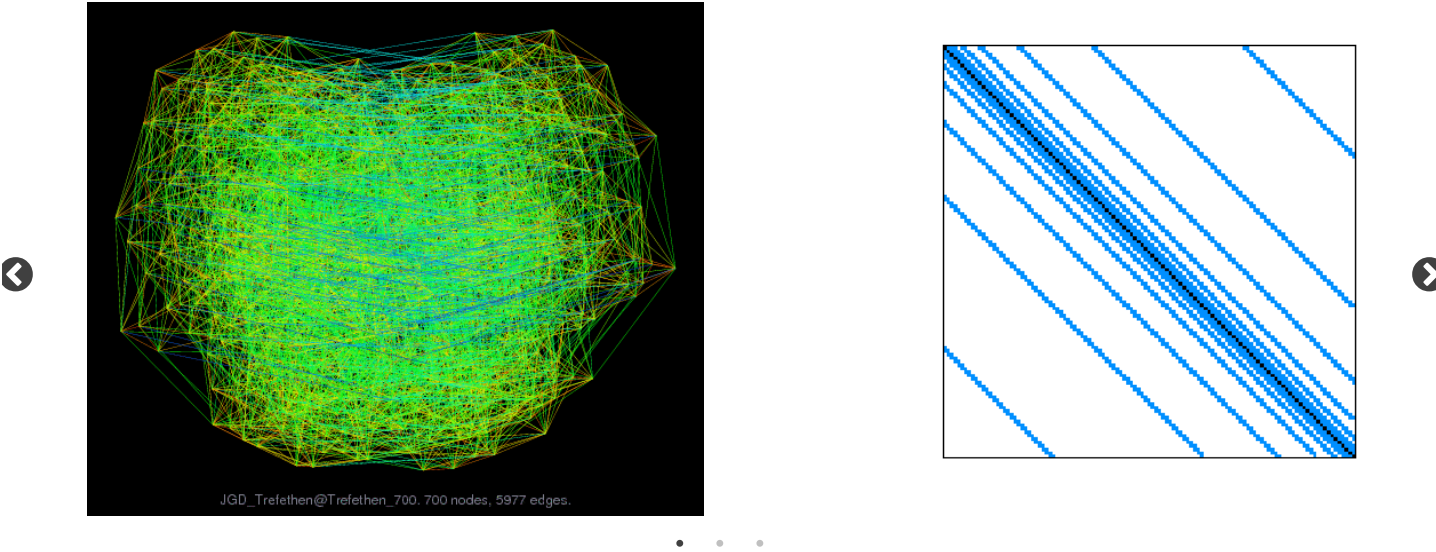


JGD_Trefethen/Trefethen_700

Diagonal matrices with primes, Nick Trefethen, Oxford Univ.



Name	Trefethen_700	
Group	JGD_Trefethen (/JGD_Trefethen)	
Matrix ID	2210	
Num Rows ⓘ	700	
Num Cols ⓘ	700	
Nonzeros ⓘ	12,654	
Kind ⓘ	Combinatorial Problem	
Symmetric ⓘ	Yes	
Date ⓘ	2008	
Author ⓘ	N. Trefethen	
Editor ⓘ	J.-G. Dumas	
Structural Rank	700	
Structural Rank Full	true	
Num Dmperm Blocks ⓘ	1	
Strongly Connect Components ⓘ	1	
Num Explicit Zeros ⓘ	0	
Pattern Symmetry ⓘ	100%	
Numeric Symmetry ⓘ	100%	
Cholesky Candidate ⓘ	yes	
Positive Definite ⓘ	yes	
Type ⓘ	integer	

SVD Statistics	
Matrix Norm	5.279287e+03
Minimum Singular Value	1.120774e+00
Condition Number	4.710395e+03
Rank	700
sprank(A)-rank(A)	0
Null Space Dimension	0
Full Numerical Rank?	yes
Download Singular Values	MATLAB 📄 (https://sparse.tamu.edu/svd/JGD_Trefethen/Trefethen_700_SVD.mat)

Download	MATLAB 📄 (https://sparse.tamu.edu/mat/JGD_Trefethen/Trefethen_700.mat)
	Rutherford Boeing 📄 (https://sparse.tamu.edu/RB/JGD_Trefethen/Trefethen_700.tar.gz)
	Matrix Market 📄 (https://sparse.tamu.edu/MM/JGD_Trefethen/Trefethen_700.tar.gz)

Notes	<p>Diagonal matrices with primes, Nick Trefethen, Oxford Univ. From Jean-Guillaume Dumas' Sparse Integer Matrix Collection, http://ljk.imag.fr/membres/Jean-Guillaume.Dumas/simc.html</p> <p>Problem 7 of the Hundred-dollar, Hundred-digit Challenge Problems, SIAM News, vol 35, no. 1.</p> <p>7. Let A be the 20,000 x 20,000 matrix whose entries are zero everywhere except for the primes 2, 3, 5, 7, . . . , 224737 along the main diagonal and the number 1 in all the positions A(i,j) with i-j = 1,2,4,8, . . . ,16384. What is the (1,1) entry of inv(A)?</p> <p>http://www.siam.org/news/news.php?id=388</p> <p>Filename in JGD collection: Trefethen/trefethen_700.sms</p>
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