Demonstration of Useful LaTeX Packages

Nicholas J. Higham[*]

June 18, 2020

See the blog post Six Useful LaTeX Packages.

Here is a footnote[1]

Here is a long URL that needs to be broken across at line at a hyphen: `https://www.hpcwire.com/2019/05/07/cray-amd-exascale-frontier-at-oak-ridge/`.

$$A = \begin{bmatrix} 12 & 3 & 0 \\ 0 & 10 & -1 \end{bmatrix}, \quad A = \begin{bmatrix} 12 & 3 & 0 \\ 0 & 10 & -1 \end{bmatrix}.$$

$\mathrm{kg\,m/s^2}$, $\mathrm{kg\,m/s^2}$

```
>> syms x, int(1/(1-x^4))
ans =
atan(x)/2 + atanh(x)/2
```

```
1  function g = gf(A)
2  %GF     Approximate growth factor.
3  %   g = GF(A) is an approximation to the
4  %   growth factor for LU factorization
5  %   with partial pivoting.
6  [~,U] = lu(A);
7  g = max(abs(U),[],'all')/max(abs(A),[],'all');
```

[*]Department of Mathematics, University of Manchester, Manchester, M13 9PL, UK (`nick.higham@manchester.ac.uk`.)

[1]`https://icl.bitbucket.io/hpl-ai/`