

Introduction to Scientific Computing Languages

Prof. **Paolo Bientinesi**

`pauldj@aices.rwth-aachen.de`

RWTHAACHEN
UNIVERSITY



Deutsche
Forschungsgemeinschaft

DFG



Cleve Moler, MathWorks

History of Matlab

Year	Version	Features
1978	Classic MATLAB	Original Fortran version
1984	MATLAB 1	C version
1985	MATLAB 2	Extended
1987	MATLAB 3	Faster, colors
1992	MATLAB 4	Sparse matrices, animations, debugger
1997	MATLAB 5	OOP, multidim arrays
2000	MATLAB 6	desktop env (help browser), LAPACK & BLAS, ARPACK
2002	MATLAB 6.5	performance
2004	MATLAB 7	non-double arithmetic, pure functions
2012	MATLAB 8	

Parallel Matlab, pMatlab, *P, Octave.

References

- Book: “Learning Matlab”
by Tobin Driscoll, SIAM
- Book: “Matlab Guide”
by Desmond Higham & Nick Higham, SIAM
- Online: `help` and `doc`

Matlab demo

prompt, help, “,” and “;”, “=”, “==,” variables, constants, arithmetic, format, single, array construction, “[]”, rand, zeros, eye, ones, linspace, “:”, end, size, norm, eig, diag, “.+”, ‘.*”, scripts (.m), if, (else, elseif) statement, for and while loops.

More Matlab

functions (definition, arguments, output), tic
toc, norm, abs, floor, ceiling.