

Drummond, L. A.; Hernandez, V.; Marques, O.; Roman, J. E.; Vidal, V.

A survey of high-quality computational libraries and their impact in science and engineering applications. (English) [Zbl 1118.65300](#)

Daydé, Michel (ed.) et al., High performance computing for computational science – VECPAR 2004. 6th international conference, Valencia, Spain, June 28–30, 2004. Revised selected and invited papers. Berlin: Springer (ISBN 3-540-25424-2/pbk). Lecture Notes in Computer Science 3402, 37-50 (2005).

Summary: Recently, a number of important scientific and engineering problems have been successfully studied and solved by means of computational modeling and simulation. Many of these computational models and simulations benefited from the use of available software tools and libraries to achieve high performance and portability. In this article, we present a reference matrix of the performance of robust, reliable and widely used tools mapped to scientific and engineering applications that use them. We aim at regularly maintaining and disseminating this matrix to the computational science community. This matrix will contain information on state-of-the-art computational tools, their applications and their use.

For the entire collection see [\[Zbl 1068.68004\]](#).

MSC:

[65-02](#) Research exposition (monographs, survey articles) pertaining to numerical analysis

[65Y15](#) Packaged methods for numerical algorithms

Software:

[ACTS](#); [ARPACK](#); [FCVODE](#); [PETSc](#); [ScaLAPACK](#); [SLEPc](#); [SLICOT](#); [SUNDIALS](#)

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