

[Denis, Christophe](#); [Montan, Sethy](#)

**Numerical verification of industrial numerical codes.** (English) Zbl 1357.65331  
ESAIM, Proc. 35, 107-113 (2012).

Summary: Several approximations occur during a numerical simulation: physical effects may be discarded, continuous functions replaced by discretized ones and real numbers replaced by finite-precision representations. The use of the floating point arithmetic generates round-off errors at each arithmetical expression and some mathematical properties are lost. The aim of the numerical verification activity at EDF R&D is to study the effect of the round-off error propagation on the results of a numerical simulation. It is indeed crucial to perform a numerical verification of industrial codes such as developed at EDF R&D even more for code running in HPC environments. This paper presents some recent studies around the numerical verification at EDF R&D.

**MSC:**

[65Y04](#) Numerical algorithms for computer arithmetic, etc.

**Software:**

[linalg](#); [BLACS](#); [CADNA](#); [MTL4](#); [TELEMAC](#); [LAPACK](#); [CLAPACK](#)

**Full Text:** [DOI](#)