# Checking Computation of Numerical Functions by the Use of Functional Equations.

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**Abstract**

Systematic use of functional equations for fault-tolerant computation of numerical functions have been introduced by M. Blum (1989) and then independently by F. Vainstein (1991). The later has introduced definition of polynomially checkable (PC) functions – the functions for which functional equations are polynomials, and proved that the class of PC functions is large and includes many commonly used functions. The functional equations that are used to check computations of numerical functions are called checking polynomials. In this paper we discuss an algorithm for computing coefficients of these polynomials. By using this algorithm we obtain checking polynomials for the commonly used functions.