A Bibliography on Approximate Integration

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This bibliography is an attempt to provide a reference to the knowledge concerning approximate integration methods, and to make better known the recent contributions to this field. The two main subjects of this bibliography are quadrature (or numerical integration) formulas—weighted linear sums of values of the integrand (and possibly derivatives of the integrand)—and finite difference approximations. Papers dealing with error theory or other properties of these methods are included.

Some topics which are not included are: applications of integration methods to the solution of differential equations; graphical methods; and tables or rational function approximations for functions expressed as integrals.

There are several reference works which give good treatments of parts of this subject. Some of the best of these—HILDEBRAND [1], BUCKINGHAM [1], and MINEUR [3]—give good summaries of the well-known integration methods for functions of one variable.

The recent book by V. I. KRYLOV [7] is probably the best all around book to date concerned with approximate integration for functions of one variable.

The small book by NIKOL'SKII [3] treats "best" quadrature formulas and extremal problems related to quadrature formulas.

The two papers by HAMMER [2] and STROUD [3] together give a good survey of what is known concerning quadrature formulas for functions of more than one variable.

KANTOROVICH & KRYLOV [1] give a good discussion concerning methods for the approximate solution of integral equations.

For references to works giving quadrature formulas, interpolation tables or tables of integrals, see FLETCHER, MILLER & ROSENHEAD [1].

A few references of historical importance have been included here. A more complete list of papers prior to 1864 is given by BIERENS DE HAAN [1], who gives 60 papers concerned with approximate evaluation of integrals.

The titles of the foreign language papers, other than French, Spanish and German, usually have been translated into English. Included are the volume, page references to reviews in *Mathematical Reviews* (MR) and *Zentralblatt für Mathematik* (Zbl.).

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The journal abbreviations are those given in *Mathematical Reviews*, Index for Volume 19, pages 1417–1430.

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