2.1 Introduction

Interpolation is the task to find an analytical function that matches a set of points (x_i, y_i) , $i \in \{0, 1, 2, ..., n\}$. This is useful mainly in the following situations: only those given points are known but approximative intermediate function values are sought, or a replacement for a given function is wanted, e.g. for simpler analytical treatment.

Note that an interpolating function can only be used for given values that are exact. If one looks for an approximating function for values that are known to contain uncertainties (as, e.g., measured values), fitting must be used (see Chapter 5 below).