Significant digits for error expression
表达误差的有效数字

- The number of significant digits used to express the error does not reflex the accuracy of the measurement, it actually indicates the quality of the error, i.e. the precision of the error itself. Usually errors of important measurements are carefully evaluated with higher precisions, and therefore we use 2 significant digits to express those errors.

$$45.26 \pm 0.01 \quad 45.262 \pm 0.032$$

bigger

- It is the same for relative errors. In most cases, 1 significant digit is good enough for ordinary measurements, e.g. 1%, 0.2%, 5%, etc.. If the assessment quality of the error is higher for some important measurements, we can use 2 significant digits for their relative errors, e.g. 1.0%, 0.24%, 5.3%, etc..

- The error evaluation of a measurement also carries some error, but it is no need to find out.