Weighted average

(1) $$< A >_w = \frac{\int_{t_0}^{t} A(t)\,\mathrm{w}(t)\,dt}{\int_{0}^{t_0} \mathrm{w}(t)\,dt}$$

where

t	time-line
t_0	initial time
$A(t)$	time-based variable
$\mathrm{w}(t)$	weighting function

See also

Formal science / Mathematics / Calculus

[t-weighted average]