Time Invariantie en Time-Scaling:

Vuistregel: als er Directe schaling/bewerking van/op t plaatsvindt is er sprake van “NIET Time Invariant” !

Bijv.:

- (ωt)
- cos(ωt)
- t^2
- 2t
- jt

Op de Web:

https://en.wikipedia.org/wiki/Time-invariant_system

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A **time-invariant** (TIV) system has a time-dependent **system function** that is not a direct function of time. Such systems are regarded as a class of systems in the field of system analysis. The time-dependent system function is a function of the time-dependent **input function**. If this function depends *only* indirectly on the time-domain (via the input function, for example), then that is a system that would be considered time-invariant. Conversely, any direct dependence on the time-domain of the system function could be considered as a "time-varying system".

Mathematically speaking, "time-invariance" of a system is the following property:[1]:p. 50

> *Given a system with a time-dependent output function $y(t)$, and a time-dependent input function $x(t)$; the system will be considered time-invariant if a time-delay on the input $x(t+\delta)$ directly equates to a time-delay of the output $y(t+\delta)$ function. For example, if time t is "elapsed time", then "time-invariance" implies that the relationship between the input function $x(t)$ and the output function $y(t)$ is constant with respect to time t:*
>
> $$y(t) = f(x(t), t) = f(x(t))$$

In the language of signal processing, this property can be satisfied if the transfer function of the system is not a direct function of time except as expressed by the input and output.

In the context of a system schematic, this property can also be stated as follows:

> *If a system is time-invariant then the system block commutes with an arbitrary delay.*

If a time-invariant system is also linear, it is the subject of linear time-invariant theory (linear time-invariant) with direct applications in NMR spectroscopy, seismology, circuits, signal processing, control theory, and other technical areas. Nonlinear time-invariant systems lack a comprehensive, governing theory. Discrete time-invariant systems are known as shift-invariant systems. Systems which lack the time-invariant property are studied as time-variant systems.

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