

Hysteresis is the dependence of a system not only on its current environment but also on its past environment. This dependence arises because the system can be in more than one internal state. To predict its future development, either its internal state or its history must be known.

If a given input alternately increases and decreases, the output tends to form a loop as in the figure. However, loops may also occur because of a dynamic lag between input and output.

Often, this effect is also referred to as hysteresis, or rate-dependent hysteresis. This effect disappears as the input changes more slowly, so many experts do not regard it as true hysteresis.

