

The Kurzweil Integral in Hysteresis Modeling

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Abstract

Many systems in science and engineering show hysteresis – a memory effect in which the response of a system depends not only on its current input but also on its history. The fact that certain memory effects is independent of the speed naturally leads to an extension of hysteresis operators to processes with jump discontinuities. Notably, the distinctive features of the theory of integration due to J. Kurzweil make it particularly well suited for studying such discontinuous processes. In this talk we discuss how the use of the Kurzweil integral has proven valuable in modeling hysteresis.

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