

Discrete-time modeling and animation with mechatronics approach for control education

Publisher: IEEE[Cite This](#)[Imre Kocsis](#) ; [Robert Mikuska](#) ; [Csaba Budai](#) ; [Károly Árpád Kis](#) ; [Péter Korondi](#) [All Authors](#)**2**Cites in
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Abstract

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- I. Introduction
- II. Problem statement
(convolution Integral)
- III. Use of discrete-time
models in preparation for
studying classical control
theory
- IV. Discrete-time transfer
function for closed form
impulse response



Abstract:

A major problem in teaching and learning control theory is acquiring unconventional systems thinking. However, using discrete-time models does not require infinitesimal mathematics, so building on the knowledge acquired at the high school level is possible. This paper aims to show how different discrete-time models (discrete-time convolution, autoregressive moving average model) can be used to illustrate the basic principles of control engineering and describe dynamic systems. With these and similar methods, the focus is shifted to understanding mechatronic engineering, thus increasing the effectiveness of the teaching.

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V. Conclusion

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