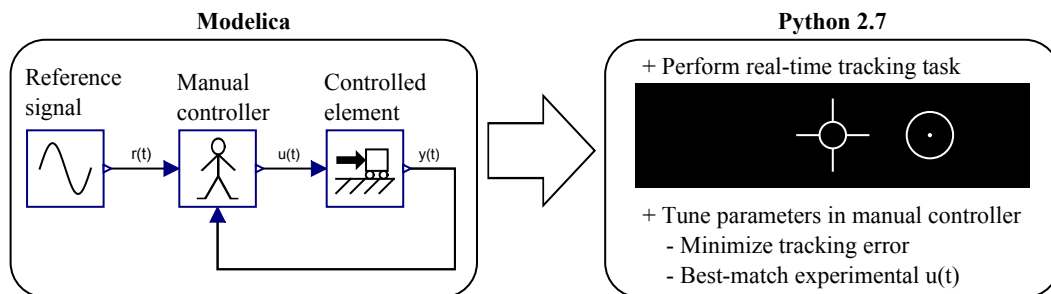


A Modelica Library for Manual Tracking

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Many systems require a human to perform real-time control. Examples include aiming a tank turret [1], driving an automobile [2], and piloting an aircraft [3]. To simulate these systems, a dynamic model of the human's control behavior is needed. The field of manual control has developed and validated such models, and their implementation in Modelica could support researchers of human-machine systems. This paper presents a Modelica library with models from the manual control literature. Python-based tools allow users to perform, in real time, the manual tracking tasks they design in Modelica. Parameter values in the manual controller models can be automatically tuned to either maximize tracking performance, or to match recorded control input from a user experiment.



References

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