tions in mind, the proposed controller can greatly improve productivity.

6 Conclusion

For modelling and simulation projects of complex technical systems, often many local controllers have to be modelled, without them being used in the final architecture. We identify boundary layer sliding mode control as a suitable approach, offering good performance without any tuning effort for many - but not all - systems. The major drawback of this class of controllers - sensitivity to measurement noise - is irrelevant in the context of simulation models.

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A Modelica Code of Simple Controller

Listing 1. Modelica Code of SimpleController

```
model SC
  ...
equation
  ...
  x[1] = actual_in_internal
    - target_in_internal;
  for i in 2:n_order loop
   x[i] = td1[i-1].y;
   x[i-1] = td1[i-1].u;
  end for;
  if exact_sliding_mode then
    y = if x*weights > 0 then output_max
    else output_min;
  else
    y = mean + authority*Modelica.Math.tanh(
          x*weights/(boundarylayer*unitsize));
  end if;

  annotation (...);
end SC;
```