

Description of physical setup:

The data comes from a continuous flow process.

Sample rate is 1 Hz.

In the first stage, Machines 1, 2, and 3 operate in parallel, and feed their outputs into a step that combines the flows.

Output from the combiner is measured in 15 locations. These measurements are the primary measurements to predict.

Next, the output flows into a second stage, where Machines 4 and 5 process in series.

Measurements are made again in the same 15 locations. These are the secondary measurements to predict.

Measurements are noisy.

Each measurement also has a target or Setpoint (setpoints are included in the first row of data).

The goal is to predict the measurements (or the error versus setpoints) for as many of the 15 measurements as possible.

Some measurements will be more predictable than others!

Prediction of measurements after the first stage are the primary interest.

Prediction of measurements after the second stage are nice-to-have but the data is much more noisy.

Note on variable naming conventions

~.C.Setpoint Setpoint for Controlled variable

~.C.Actual Actual value of Controlled variable

~.U.Actual Actual value of Uncontrolled variable

Others Environmental or raw material variables, States / events, etc.

Start col	End col	Description
0	0	Time stamp
1	2	Factory ambient conditions
3	6	First stage, Machine 1, raw material properties (material going in to Machine 1)
7	14	First stage, Machine 1 process variables
15	18	First stage, Machine 2, raw material properties (material going in to Machine 2)
19	26	First stage, Machine 2 process variables
27	30	First stage, Machine 3, raw material properties (material going in to Machine 3)
31	38	First stage, Machine 3 process variables
39	41	Combiner stage process parameters. Here we combines the outputs from Machines 1, 2, and 3.
42	71	PRIMARY OUTPUT TO CONTROL: Measurements of 15 features (in mm), along with setpoint or target for each
72	78	Second stage, Machine 4 process variables
79	85	Second stage, Machine 5 process variables
86	115	SECONDARY OUTPUT TO CONTROL: Measurements of 15 features (in mm),

along with setpoint or target for each