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Lessons learned from building twins for partical accelerators: the value of architecture and patterns

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Particle accelerators are complex machines consisting of hundred of devices. Control systems and commissioning g applications are used to steer, control and optimise them. Online models allow deriving characteristic parameters during operation.

These online models need to combine components that use different views of the same physic quantity. Therefore appropriate support has to be provided to connect to the models. Similar tooling is required to connect to the real machine. Appropriate design of this glue facilitates constructing these twins.

The authors report on their experience on available tools, architecture concepts and patterns used which simplify setting up and operating these twins in an accelerator world.

I want to participate in the youngRSE prize

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