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Digital twins in manufacturing processes –from hype to real examples

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These years, society experiences a dramatic change due to the everywhere present digitalization. We all know how our lives have been changed due to social media and just recently the chatbots based on AI may force us to rethink the way we arrange our entire educational system. Production and manufacturing are no exceptions and a similar disruption of how we produce products industrially is underway, but it is not equally visible.

This transition is often referred to as the 4th industrial revolution or just Industry4.0 in brief. An important part of that transformation is what we call “digital twins” where we based on measurements and advanced mathematical models expressing the underlying physics, can make a digital representation of a product and its manufacturing process chain. Depending on the purpose, these digital twins can be very complex or relatively simple and go from nano scale up to meter scale.

In the presentation we will give a general background for digital twins in a manufacturing setting and then show some examples from advanced 3D print processes in metal and plastic as well as more traditionally produced cast parts.

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