
Numerical Simulations

THE **KEY** TO **SMARTER,**
FASTER INDUSTRIAL
PROCESSES



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→ WHAT IS A NUMERICAL SIMULATION?

Numerical simulations are computational models that help to predict the behaviour of complex physical systems and processes.



→ HOW NUMERICAL SIMULATIONS WORK?

They solve complex mathematical equations, based on the laws of physics, using powerful computers.

INPUTS



OUTPUTS



→ ADVANTAGES OF USING NUMERICAL SIMULATIONS



COST REDUCTION

Reduced need for physical prototypes and real-world testing



INCREASED ACCURACY

Detailed analysis of complex processes



ACCELERATED INNOVATION

Accelerated product and process improvement

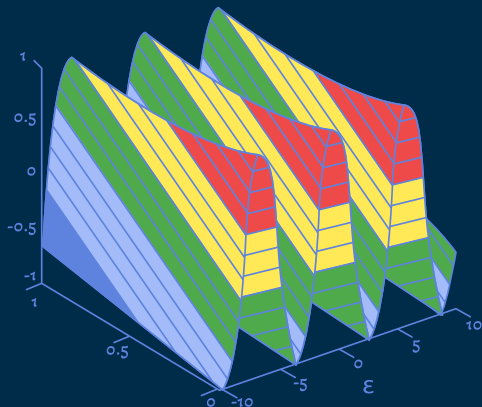


→ DRAWBACKS OF USING NUMERICAL SIMULATIONS



COMPUTATIONAL COST

Simulations can require significant computational power and time.



MODEL ACCURACY

The accuracy of simulations is highly dependent on the quality of the mathematical models and input data.



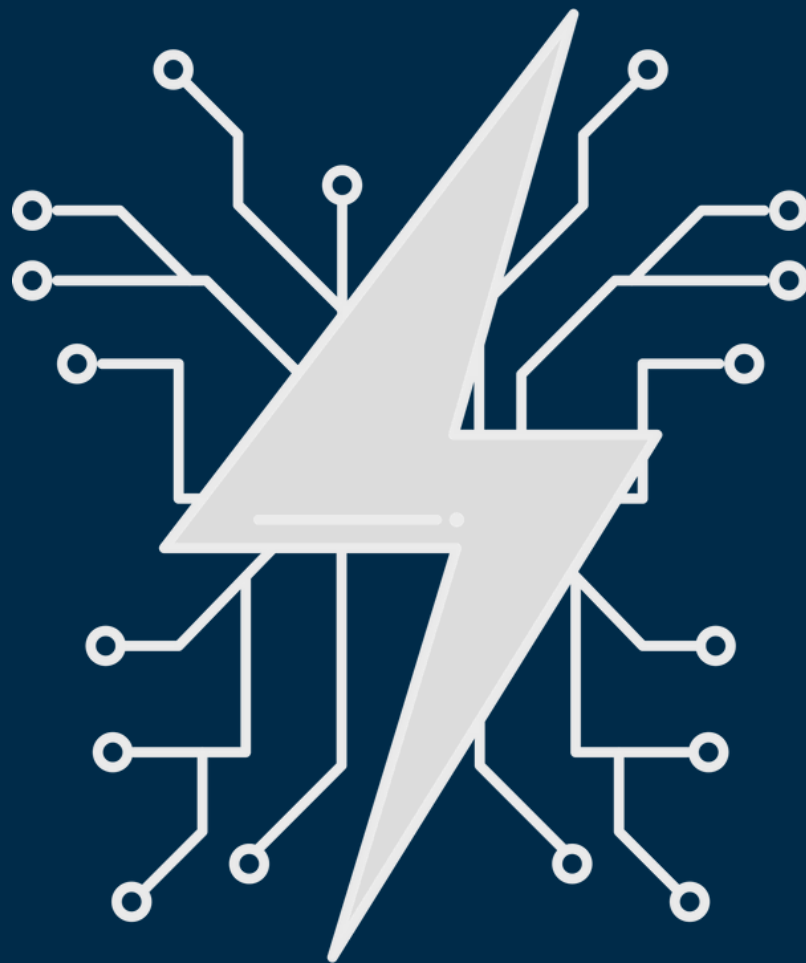
COMPLEXITY

Highly complex systems may require simplifications that may lead to a reduction of the results fidelity.



→ THE FUTURE OF NUMERICAL SIMULATIONS

Numerical simulations are evolving to deliver more accurate and faster results with advances in quantum computing and artificial intelligence.





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SIMULATIONS ARE BEING
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