

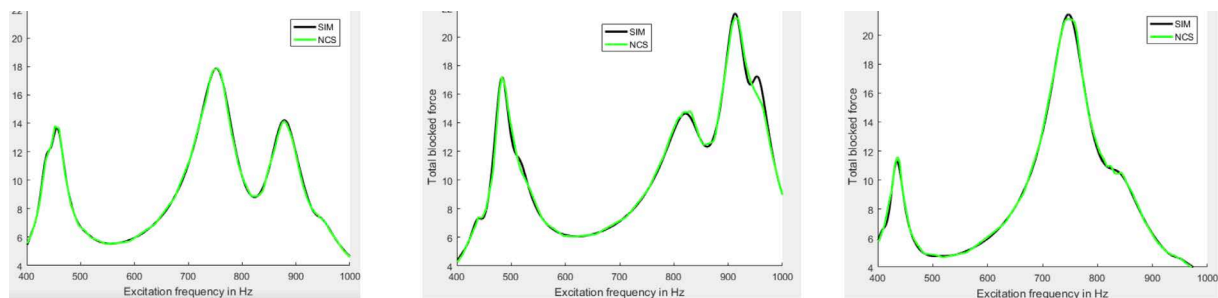
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Neural Concept and Bosch Research have been collaborating on successful applications of 3D Deep Learning based surrogate models

Neural Concept and Bosch Research collaborated over the past months on a set of successful applications of 3D geometric deep learning techniques powered by the Neural Concept Shape (NCS) software.

More particularly, we achieved promising results on E-Drive motor housing simulations. Bosch Research engineers trained a deep Geometric Convolutional Neural Network (GCNN) to emulate accurately, in a few ms, the fully-fledged Finite Element software. Roland Schirmacher, Structural Dynamics and Acoustics engineer at Bosch Research, who actively used NCS said that « For the considered application, NCS performs clearly better than currently used surrogate models and therefore we see the potential of NCS for more use-cases ».

These successful results encouraged Bosch Research to continue the collaboration with Neural Concept on a further application of shape design optimization.



Neural Concept Shape is a high-end deep learning software, which understands 3D shapes (CAD) and learns how they interact with the laws of physics (CAE). It is able to emulate full-fledged simulators, giving predictions in approximately 30 ms, versus minutes to hours (or even days) for classic simulators. In other terms, engineers can use Neural Concept Shape to explore, manually or automatically, an infinite amount of designs without calling back the resource-consuming, time-consuming simulator. This allows to dramatically accelerate R&D cycles, enhance product performance and solve the most difficult engineering challenges.