

## Using machine learning algorithms to interpret finite element simulations of indentation experiments including tip radii effects

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Machine learning algorithms have already been used to interpret indentation data. In this study, different machine learning models will be used on data with different fidelities, closing the gap from 2D and 3D simulations. This will be done using Residual Multi Fidelity Neural Networks and other machine learning techniques. Data gained by finite element simulations of the indentation process will be used to find features in indentation curves and train machine learning algorithms for predicting elasto-plastic parameters and tip radii. The estimation of tip radii is expected to enable insights into tip wear during indentation experiments in future.