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# Intro to Citrination Data View

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## Models

Learn more about Model Reports and Machine Learning in our Citrination Knowledge Base.

Property Fatigue strength

Property Fatigue strength



## Model Settings

Table representation of the machine learning algorithm and hyperparameters from the most recent machine learning training session. The Lolo estimator is Citrine's open source machine-learning library.

### Algorithm: Ensemble of non-linear estimators

Number of estimators	64
Minimum samples per leaf	1
Maximum tree depth	30
Uses jackknife method of uncertainty estimation	true
Leaf model	Mean

**Number of cross-validation folds: 3**

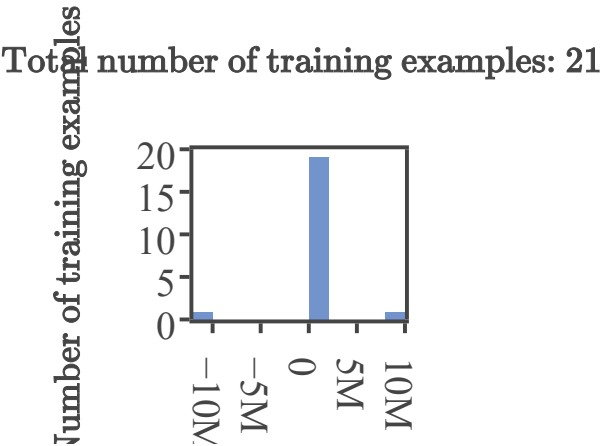
# Important Features

A list of features used to train the model ranked by importance scores. Importance scores sum to 1 and are representative of a given feature's contribution to the model's performance. Learn about the features that are used as inputs to machine learning models on the Citration Platform.

Property Fatigue strength	
mean of Zunger Pseudopotential radius ratio for formula	48%
mean of Non-dimensional band gap for formula	11%
mean of Elemental melting temperature for formula	9%
mean of Elemental crystal structure (space group) for formula	8%
Property Through hardening temperature	6%
mean of Shear Modulus Melting Temp Product for formula	5%
mean of Valence electron density for formula	3%
Minimum atomic fraction for formula	3%
mean of Pauling electronegativity for formula	3%
mean of DFT energy density for formula	3%
mean of Non-dimensional liquid range for formula	0%
mean of Ionization Affinity Ratio for formula	0%

# Training Data

A description of the training data used to train the model. Displayed below are the number of training examples and a distribution of values for the given property.

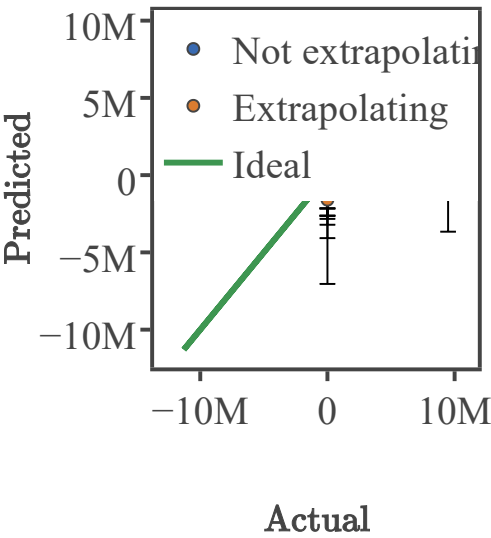


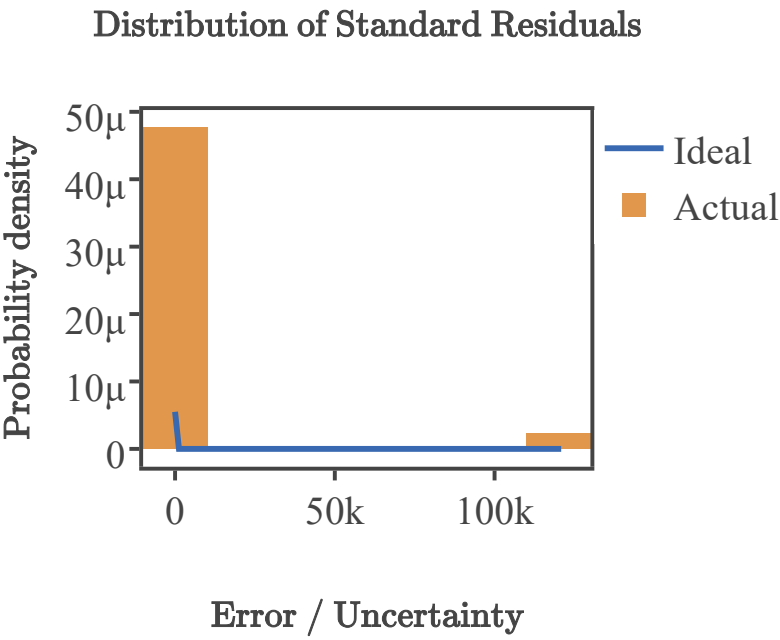
Property Fatigue strength

Performance

Error Metric	Value
Non-dimensional model error (NDME) (0.0 for a perfect model)	1.07
Standard error in the estimate of NDME (0.0 for a perfect estimate)	0.529
Root mean squared error (RMSE) (0.0 for a perfect model)	3.44e+6
Standard Error in the estimate of RMSE (0.0 for a perfect estimate)	1.70e+6
Uncertainty calibration: fraction of actual values within the prediction error bars (0.68 is perfectly calibrated)	0.810
Uncertainty calibration: root mean square of standardized errors (RMSSE) (1.0 is perfectly calibrated)	2.64e+4

Property Fatigue strength





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