

Material Mechanical Properties Fitting Tool (MecFit)

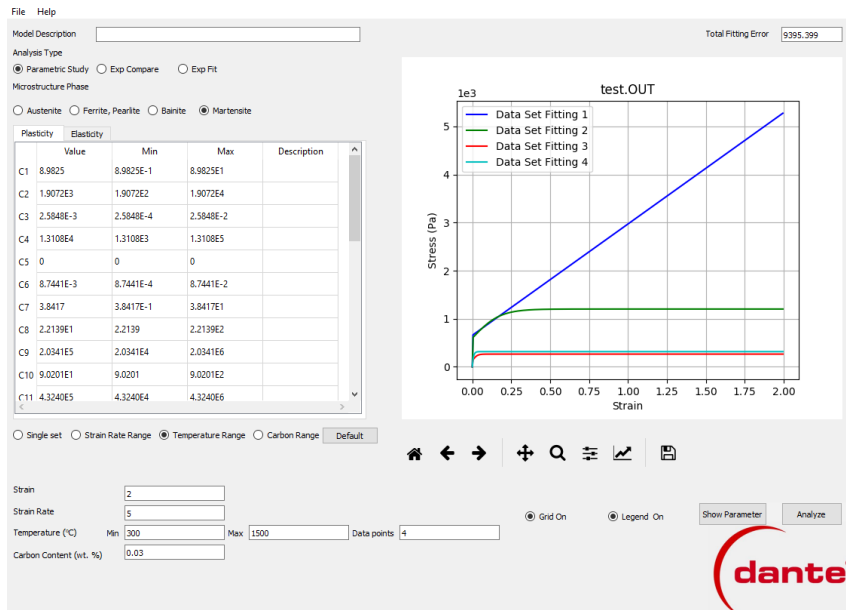
MecFit is a standalone utility designed to expand the user material database by providing experiment data of plastic properties for individual phase or stress-strain data.

It can be used to determine the internal state variable constants that DANTE uses. These constants describe yielding, recovery and hardening mechanisms, and also the strong effect of carbon on mechanical behavior of the alloy.

Different options for users are provided, include providing different strain rate range, different temperature range, different carbon range or provide experiment data of stress-strain-strain-temperature-carbon. MecFit is a powerful tool for Dante users to expand their material database.

Features of MecFit

Provide range of strain rate, temperature or carbon content



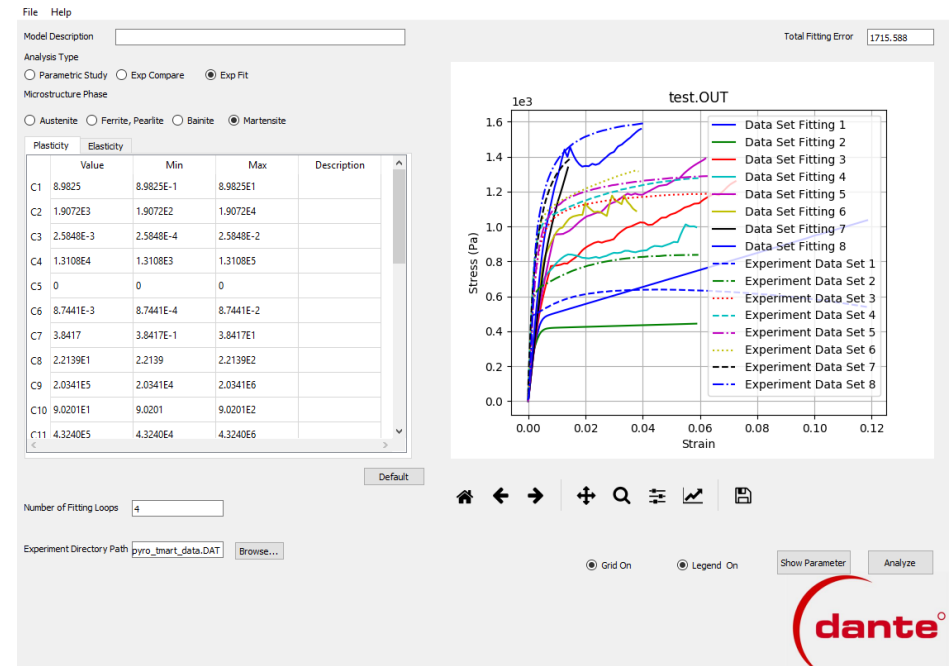
MecFit fitting for given parameters



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Provide experiment data for MecFit

Multiple experiment runs can be used as input of MecFit. The following example shows the fitting comparisons with 8 experiment runs.



MecFit fitting compares with experiment data

After the stress-strain curves fitting, the utility will provide 27 parameters to the user to use in DANTE for this material.