CDS-2023 Composite Design Software

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Introduction

CDS-2023 as an advanced real time solver for composite design and analysis.

CDS-2023 includes a variety of solvers for composite micromechanics, predicting thin and thick section properties and stresses-strains.

CDS-2023 also includes thermal and cure stress analysis with real time heat transfer.

Data flow enables parametric design of composites that connect micromechanics to laminate stress analysis from mechanical, thermal and moisture loading.

CDS Unification of Legacy Codes

Micro-Mechanics Models

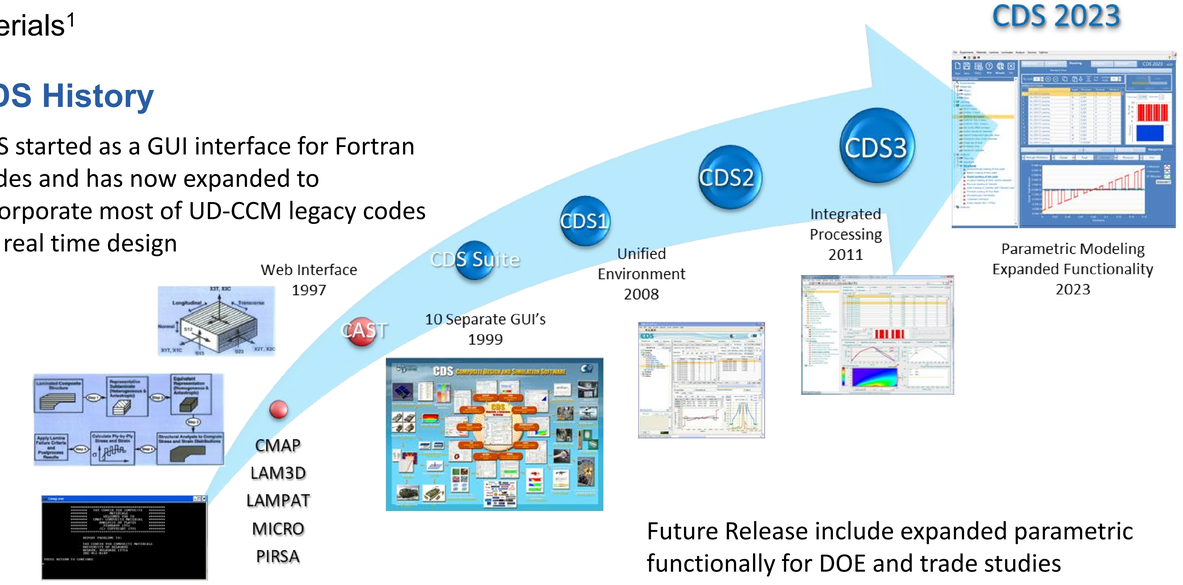
- ***MICRO***: Self Consistent Micromechanics
- ***SMC***: Advanced Micromechanics
- ***TEXCAD***: Textile Micromechanics

Macro-Mechanics Models

- ***CMAP***: Composite Materials Analysis of Plates
- ***PIRSA4***: Process Induced Residual Stress Analysis
- ***COMPROSOFT***: Generic composites processing
- ***LAM3D***: 3D Laminated Media Analysis
- ***CCDS***: Composite Cylinder Design Software
- ***CST***: Composite Structures Toolkit
- ***MDS***: Moisture Diffusion Software
- ***DART***: Data Analysis and Reduction Toolkit
- ***CDS-MAT***: Materials Database Management Software
- Non-Linear Variants of above software also developed

CDS History

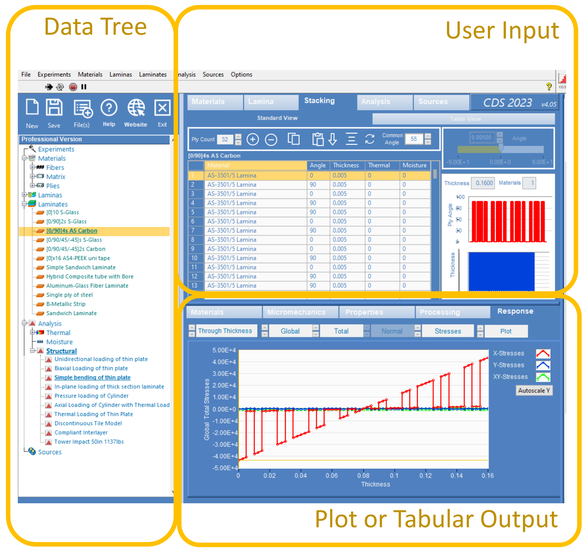
CDS started as a GUI interface for Fortran Codes and has now expanded to incorporate most of UD-CCM legacy codes for real time design



Future Release include expanded parametric functionally for DOE and trade studies

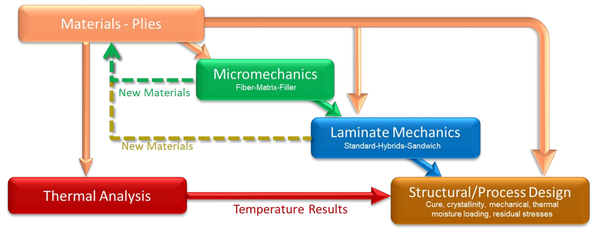
CDS Used as a Design Tool for various UD-CCM Programs

GUI Interface



Real Time Data Flow

- Connectivity from micromechanics to laminate design
- Create Plies and materials from micromechanics and laminates
- Over 200 built in materials, laminas and laminates included.
- Built in Ashby chart functionality to search materials based on properties



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