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NuMAD User's Manual

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Abstract

Sandia National Laboratories has an on-going effort to reduce wind turbine blade cost through improved blade manufacturing techniques and design-for-manufacturing. As part of this effort, a new software tool named NuMAD (Numerical Manufacturing And Design) has been developed to greatly simplify the process of creating a three-dimensional finite element model for a modern wind turbine blade. NuMAD incorporates manufacturing guidelines as well as databases of airfoils, materials, and loadings to significantly reduce the time required for model creation. NuMAD is a stand-alone, user-friendly, windows based (graphical) pre-processor and post-processor for the ANSYS® commercial finite element engine. This user's manual describes the capabilities of NuMAD.