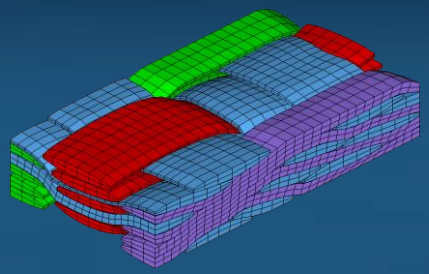
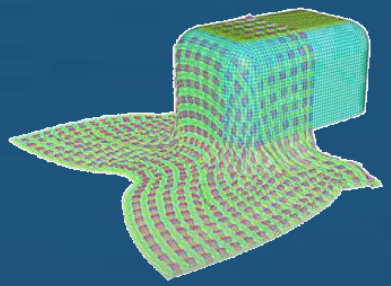
KTEX FAMILY
INTEGRATED NUMERICAL TOOLS



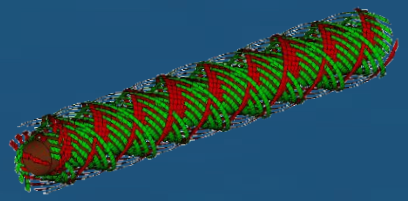
KTEX PATTERN

- Realistic industrial weave geometry and mesh
- Customized weave with weaving loom parameters
- Automatic model in HyperMesh including contact and material of yarns



KTEX LAYUP

- Identify shape of ply during lay-up process
- Project material properties (Vf and yarn orientation) on macro scale mesh
- Updated yarn orientation for simulation



KTEX WINDING

- Define real pattern of winding integrating yarn size
- Generate macro scale material properties

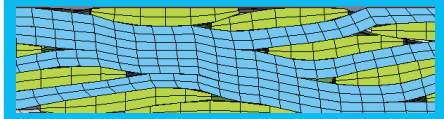
KTEX WOVEN PROPERTY

- Calculation of homogenized properties for any 2D and 3D weave
- Automatic generation of RADIOSS and OptiStruct cards
- Possibility to create bespoke weaves through interlacement map

KTEX FAMILY

•Integrated in HyperWorks™ tools
•Simulation of composite processes integrating manufacturing constraints (weaving, laying up, winding)
•Automatic calculation of composite linear properties

Microscale analysis



Microscale mesh

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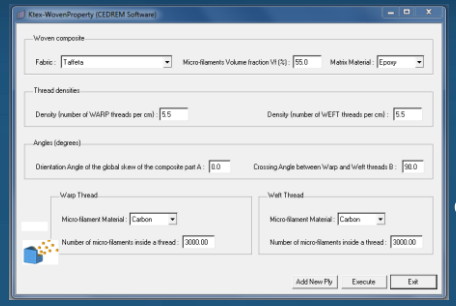
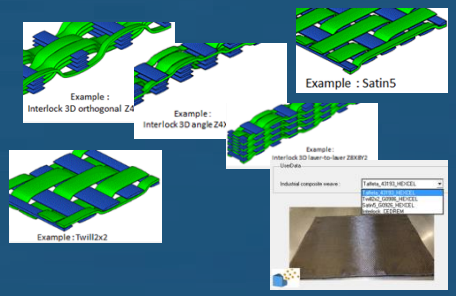
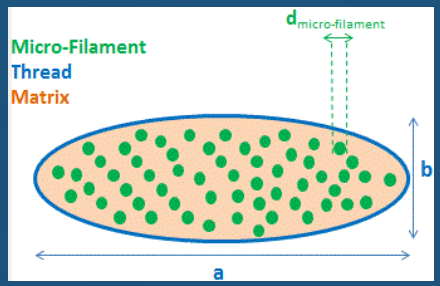
KTEX WOVEN PROPERTY







KTEX WOVEN PROPERTY

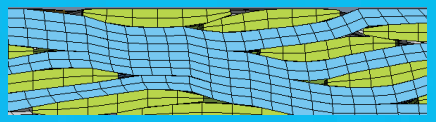
ANALYTICAL HOMOGENIZATION SOFTWARE OF 2D & 3D WOVEN COMPOSITES

- User friendly interface
- Generation of RADIOSS and OptiStruct cards compatible with the HyperWorks™ suite
- Huge database of existing weaving patterns
- Possibility to use a customized interlacement map
- Database of industrial commercial weaves
- Possibility to use customized materials for fibers and matrix
- Geometry of the fibers taken into account
- Specification of the Vf of the final weave
- Stacking of different plies available

KTEX FAMILY

- Integrated in HyperWorks™ tools
- Simulation of composite processes integrating manufacturing constraints (weaving, laying up, winding)
- Automatic calculation of composite linear properties

Microscale analysis



Microscale mesh

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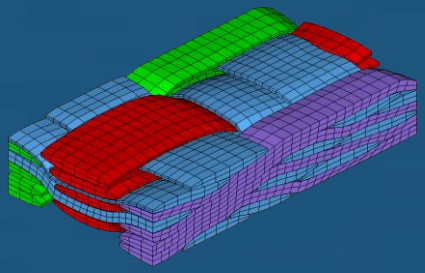
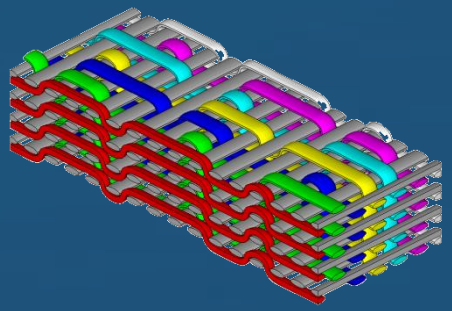
KTEX FAMILY
KTEX PATTERN





KTEX PATTERN

AUTOMATIC WEAVE MESHING SOFTWARE

User friendly interface

Input parameters taken from the looming process and the fibers dimensions (interlacement map, spacings,…)

2D and 3D weaves possible

Automatic generation of contacts between yarns

Properties and materials generated automatically

Choice of solid or shell mesh

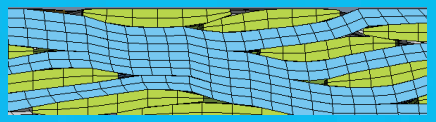
Very fast computation

Works with any kind of interlacement map, including the most complex

KTEX FAMILY

- Integrated in HyperWorks™ tools
- Simulation of composite processes integrating manufacturing constraints (weaving, laying up, winding)
- Automatic calculation of composite linear properties

Microscale analysis



Microscale mesh

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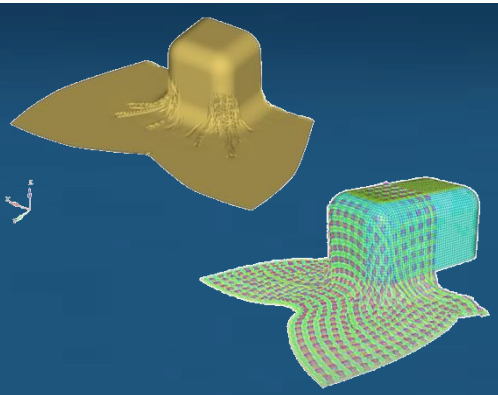
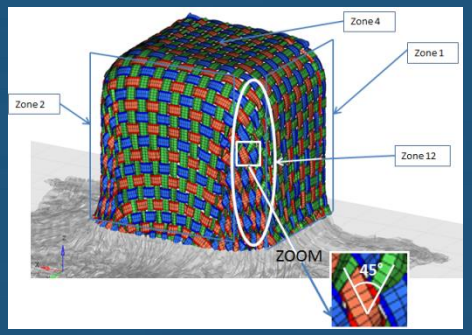
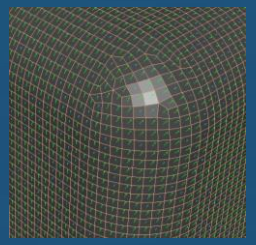
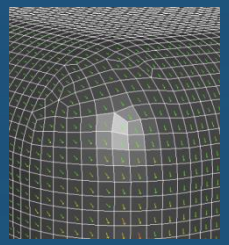
KTEX FAMILY
KTEX LAY UP









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KTEX LAYUP

AUTOMATIC WEAVE LAYING-UP SOFTWARE

User friendly interface

Simple input parameters: weave, punch and process velocity

Automatic generation of a ready-to-run model including die, process velocities and contacts

Mapping algorithm to automatically calculate the new mechanical properties taking into account the laying up process and the geometry of the final part

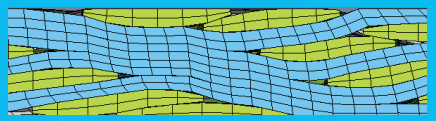
Works with any kind of interlacement map, including the most complex

Automatic calculation of the compaction of the yarns and of the tensioning of the warp threads

KTEX FAMILY

- Integrated in HyperWorks™ tools
- Simulation of composite processes integrating manufacturing constraints (weaving, laying up, winding)
- Automatic calculation of composite linear properties

Microscale analysis



Microscale mesh

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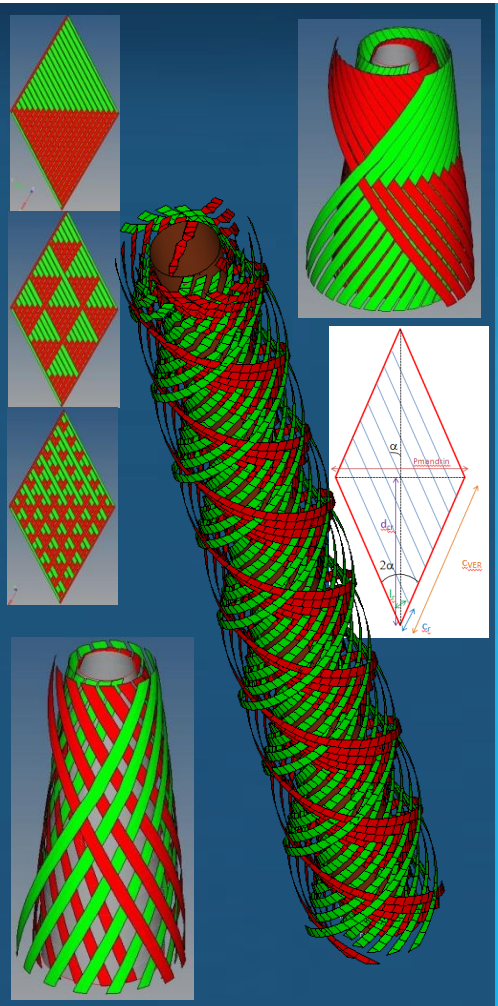
KTEX FAMILY
KTEX WINDING



KTEX WINDING

AUTOMATIC WINDING SOFTWARE

User friendly graphic interface

Different user modes :

- Visualization to observe how the ribbons cross with each other
- Ready-to-run model to simulate the winding process and compact the ribbons around the core

Simple input parameters: winding angle, ribbon material, ribbon width and thickness

Database of mechanical properties for standard materials (carbon, glass, aramid)

Possibility to define a customized ribbon material

KTEX FAMILY

- Integrated in HyperWorks™ tools
- Simulation of composite processes integrating manufacturing constraints (weaving, laying up, winding)
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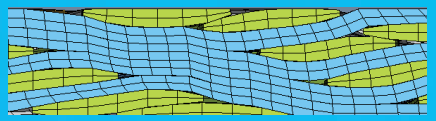
Microscale analysis



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