

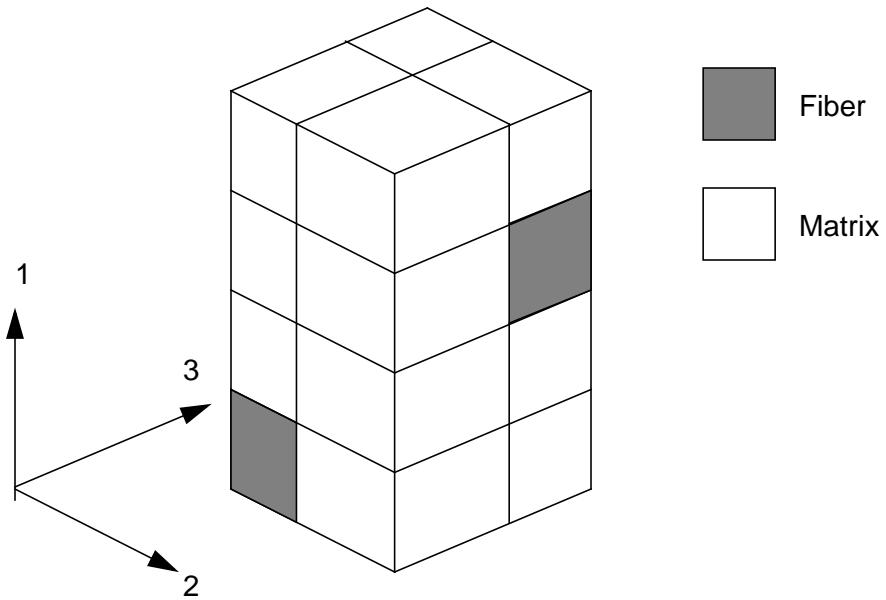
6.8 Example H: Triple Periodic GMC; [0/90]

Sample Input File For Triple Periodic GMC

Problem Summary:

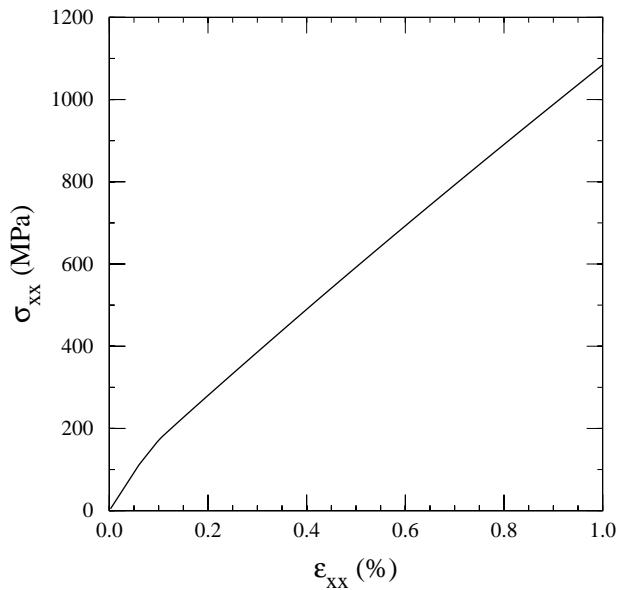
Loading:	Mechanical, Strain control
Load History Data:	$\dot{\epsilon} = 0.01/\text{sec}$, $\epsilon_{max} = 0.01$, $\Delta t_{\text{constant}} = 0.00025 \text{ sec}$
Micromechanics model:	Triple Periodic GMC
Fiber Packing Arrangement:	Rectangular Pack at 46% fiber volume ratio (input manually, see figure below)
Integration Algorithm:	Forward Euler
Constituent Material Model:	Bodner-Partom
Constituents:	Fiber: Boron Matrix: Aluminum (6061-0a)

This problem uses the 3-D GMC model to simulate a [0/90] laminate as shown below.



test of gmc3d model 0/90 laminate simulation
*PRINT
 NPL=10 %
*LOAD
 LCON=2 LOP=3 LSS=1 %
*MECH
 NPTW=2 TI=0.,1. LO=0.,0.01 %
*MODEL
 MOD=2 %
*SOLVER
 NTF=1 NPTS=2 TIM=0.,1. STP=0.00025 %
*FIBER
 NFIBS=1
 NF=1 MF=6 NDPT=1 TEMP= 21. MAT=A %
*MATRIX
 NMATX=1
 NM=1 MM=1 NDPT=1 TEMP= 21. MAT=C %
*MRVE
 IDP=99
 NA=4 NB=2 NG=2
 D=0.67823,0.32177,0.67823,0.32177
 H=0.67823,0.32177
 L=0.32177,0.67823
 CM=M1,M1
 CM=M1,M1
 CM=M1,M1
 CM=F1,M1
 CM=M1,M1
 CM=F1,F1
 CM=M1,M1
 CM=F1,M1 %
*CURVE
 NP=10 %
*MACRO
 NT=1
 NC=1 X=3 Y=9 NAM=apdxh %
*END

The following figure was obtained from the x-y plot data file produced by the present example.



☞ **Note:** It is recommended that a new user construct a **MAC/GMC** input file using the data given in this Example and then check to see if the same result plot is obtained.