1. ~~网格更新后，程序修改在afem的Assembly Label Manager里修改Label Offset。~~
2. 车辆节数改变后，程序修改Constraint。
3. ~~Solve前，~~
   1. ~~将Output Elements输入到group ElementForResponse中；将Output Nodes输入到Group NodeForResponse中。~~
   2. ~~将expression Num\_Of\_Time\_Steps的值设置到Time\_Step的Number of Time Steps中。~~
   3. ~~根据Output Nodes for Noise修改Noise\_Structure\_Output的Enable VELOCITY Request。~~
4. ~~Excitation Input中缺少界面惯性矩和横截面面积的expression定义，需要处理单位转换（base unit to SI unit）。~~
5. ~~Nastran dat采用mm - milli-newton单位。~~
6. ~~Excitation.exe计算完后检查计算是否成功？~~
7. ~~Read\_excitation.exe输入文件，rail nodes sequence。文件名excitation\_nodes.dat，文件格式：~~

*~~$Rail Node Label Sequence~~*

*~~13~~*

*~~25~~*

*~~32~~*

1. ~~Read\_excitation.exe计算完后检查计算是否成功？成功后将结果文件force.dat, moment.dat, dload.dat复制到工程文件夹下。~~
2. 调用nastran求解。解析f06结果或pch结果。
   1. 解析structure output。
      1. ~~提取D I S P L A C E M E N T V E C T O R，Time-T1-T2-T3-R1生成afu record。Record name：Displacement-NodeID-X/Y/Z~~
      2. ~~提取A C C E L E R A T I O N V E C T O R，Time-T1-T2-T3生成afu record。Record name：Acceleration-NodeID-X/Y/Z~~
      3. 提取S T R E S S E S I N B E A M E L E M E N T S, Time-SXC-生成afu record。Record Name: Stress-ElementID-NodeID(Grid)-SXC
   2. ~~解析noise output。~~
3. ~~提取V E L O C I T Y V E C T O R，Time-T1/T2/T3, Time-SXC-生成afu record。Record Name: Velocity- NodeID-X/Y/Z~~
4. ~~按照Node几何空间以给定顺序存入afu。~~

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |

X

Z

1. 计算noise。选择计算点(落在隧道空腔内，输入数量控制)，输出相对坐标，相对平面中心点（只计算第一部分）。
   1. ~~对<prjName>\_noise\_time-velocity.afu进行FFT变换，生成node\*.dat。文件格式：~~

*~~Total Point Count: 2021~~*

*~~X Value Real Imaginary~~*

*~~1. 0.000000E+000 -2.835952E-004 0.000000E+000~~*

*~~2. 4.949270E-001 6.034958E-003 5.952143E-004~~*

*~~3. 9.898539E-001 6.402297E-004 7.574751E-003~~*

*~~4. 1.484781E+000 2.258011E-002 1.394601E-004~~*

*~~5. 1.979708E+000 5.840640E-004 -2.278144E-002~~*

* 1. ~~坐标输入。文件名output\_point.dat，格式：~~

*~~$ Relative Coordinate~~*

*~~$ Index X Y Z~~*

*~~1 1.0 1.0 1.0~~*

*~~2 2.1 2.2 1.0~~*

1. ~~noise.exe计算完后检查计算是否成功？~~
2. ~~提取noise.exe的output，生成<prjName>\_noise.afu。文件名Rail\_Noise\_Time\*\*.out。文件格式：~~

*~~HEIGHT = 3.00000000000000~~*

*~~Time Sound Pressure(decibal)~~*

*~~0.00202050 78.13139343~~*

*~~0.00404100 81.24166870~~*

*~~0.00606150 78.35054779~~*

*~~0.00808200 82.25679016~~*

1. 求解计算的多线程调用