

网格划分

研发

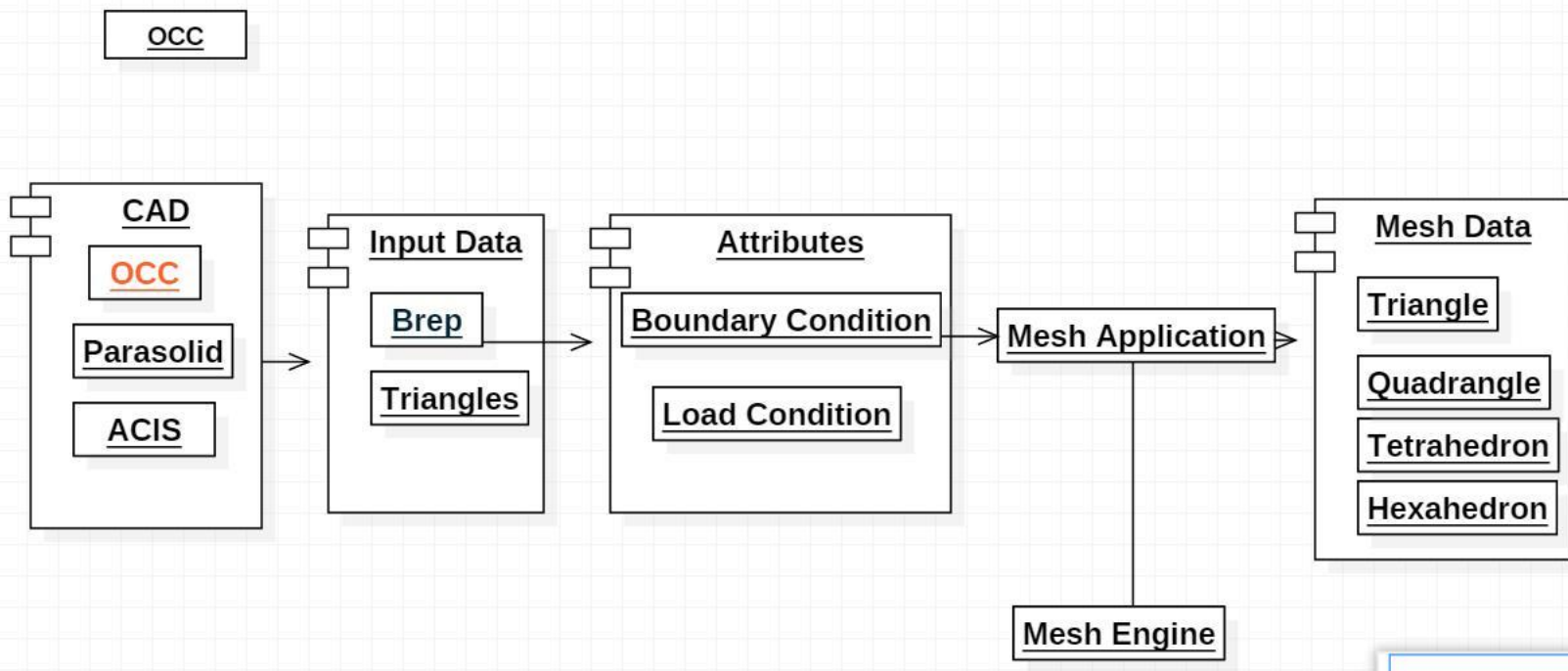
主流商业网格引擎

- MeshGem
- VKI
- Simmetrix

开源网格引擎

- Gmsh
- Netgen
- Tetgen
- CGAL
- MeshLab

网格流程



(非)结构化网格

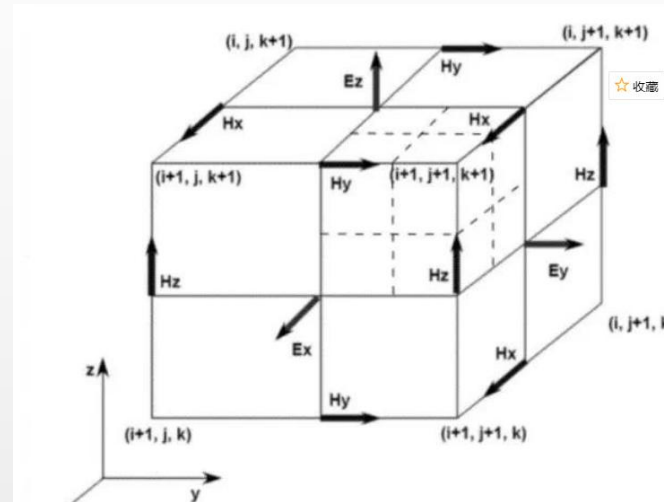
- 六面体 四边形 --结构化网格

Structure/Un-structure Mesh

FDM :Finite Difference Method

Structure mesh: Grid

FDTD: no mesh, but Yee Cell



Un-structure mesh: Triangle/Tet

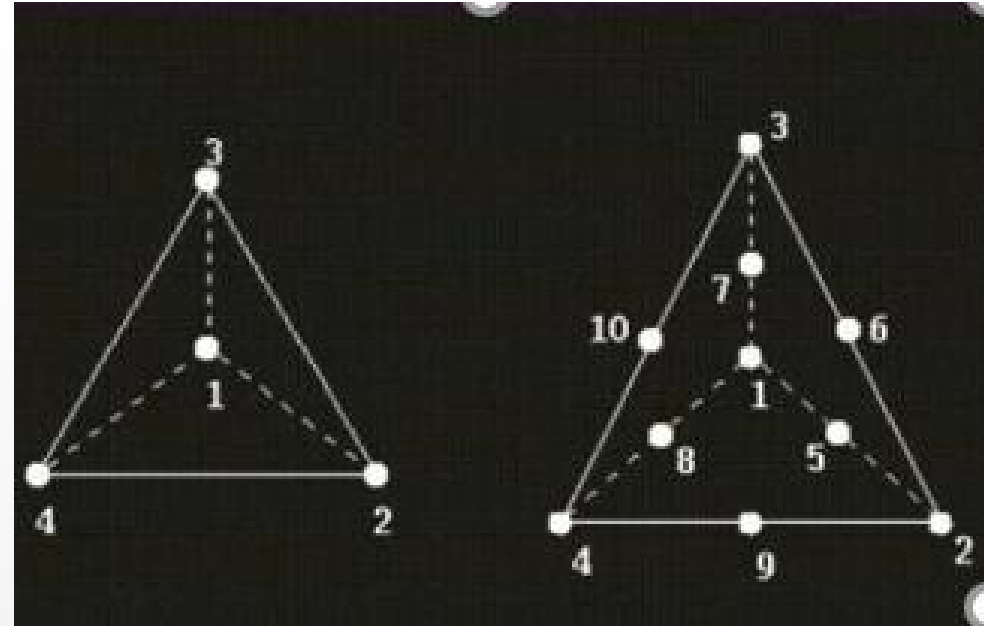
网格阶数

- EDA --0 阶 线性
- 结构 --1阶 线性

FEM: P element/H element

1. P Element:

Increase polynomial order



1. H Element:

Refine mesh

常用网格控制参数

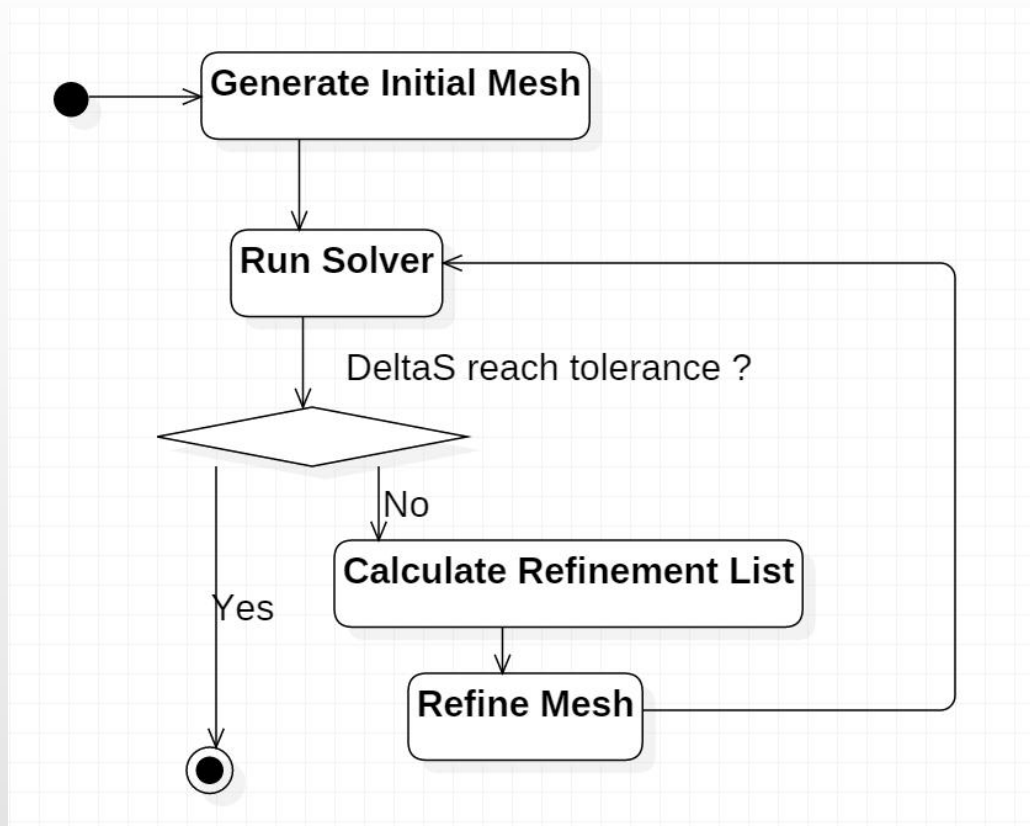
- global size
- seeding on edge/face/solid
- isotropic
- growth rate
- spanning angle

网格质量检查

编号(ID)	单元类型	纵横比(Aspect Ratio)	最小角	最大角	偏离度(Skew)	雅克比(Jacobian)	翘曲角(Twist)	锥形度(Taper)	扭曲度(Warp)
1	1	7.91329	75.0269	107.737	15.3118	0.00183827	0	1.38141	2.83664
2	2	6.49021	76.7447	103.644	12.1195	0.00216456	0	1.31473	0.411036
3	3	6.26874	80.4636	99.8923	8.31221	0.00218759	0	1.31427	0.271207
4	4	6.26822	80.496	99.9202	8.31881	0.00218735	0	1.31446	0.237272
5	5	6.1701	84.5651	95.176	3.91348	0.00219101	0	1.3129	0.0234911
6	6	6.17034	84.4676	95.3292	4.01844	0.00219059	0	1.31274	0.0288564
7	7	6.17151	83.6077	95.8779	4.83421	0.00219917	0	1.31477	0.0456941
8	8	6.17081	83.6603	95.9279	4.79228	0.00219847	0	1.31486	0.0678927
9	9	7.54558	83.14	97.23	5.8534	0.00182932	0	1.3203	0.0573572
10	10	7.54766	83.0517	97.0858	5.83518	0.0018292	0	1.31961	0.160258

网格生成算法

网格加密/稀疏



MeshChecker介绍

一篇文章入门系列



Q&A