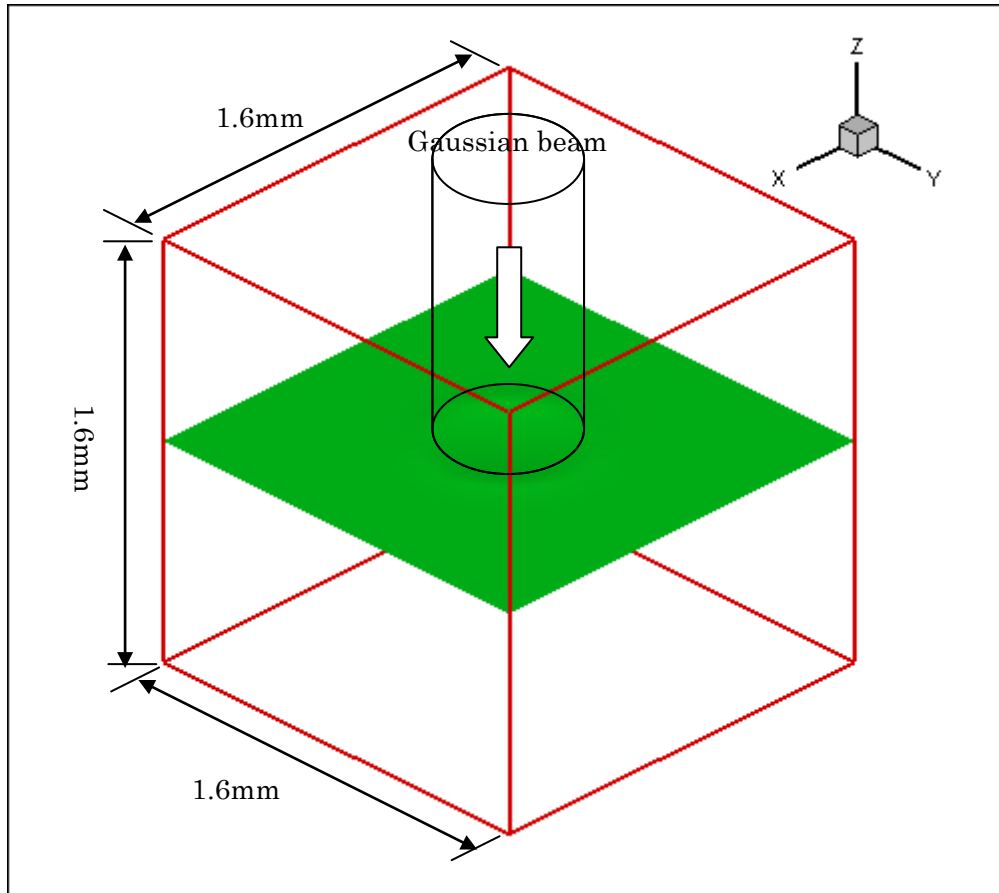


レーザー溶接プログラム 計算事例

平成23年2月

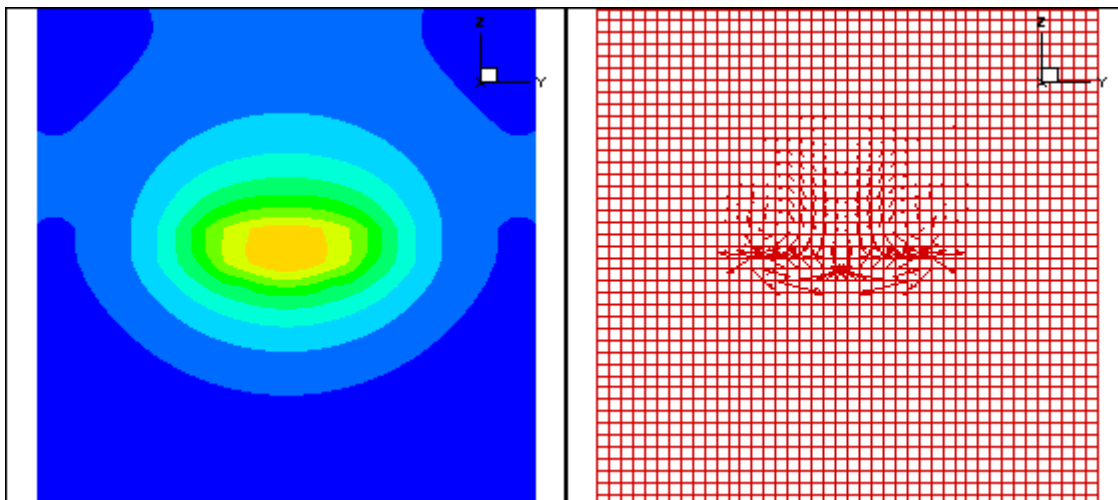
材料	Fe-C(0.1wt%)
レーザーパワー	100W
Beam	Gaussian beam
w_0	0.4mm



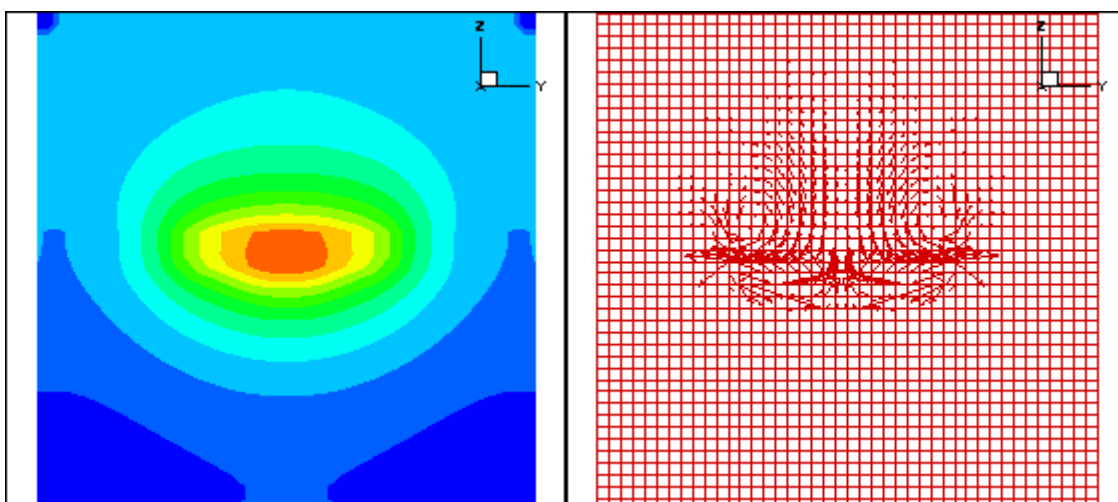
y-z 断面の温度分布

t = 0.01 sec

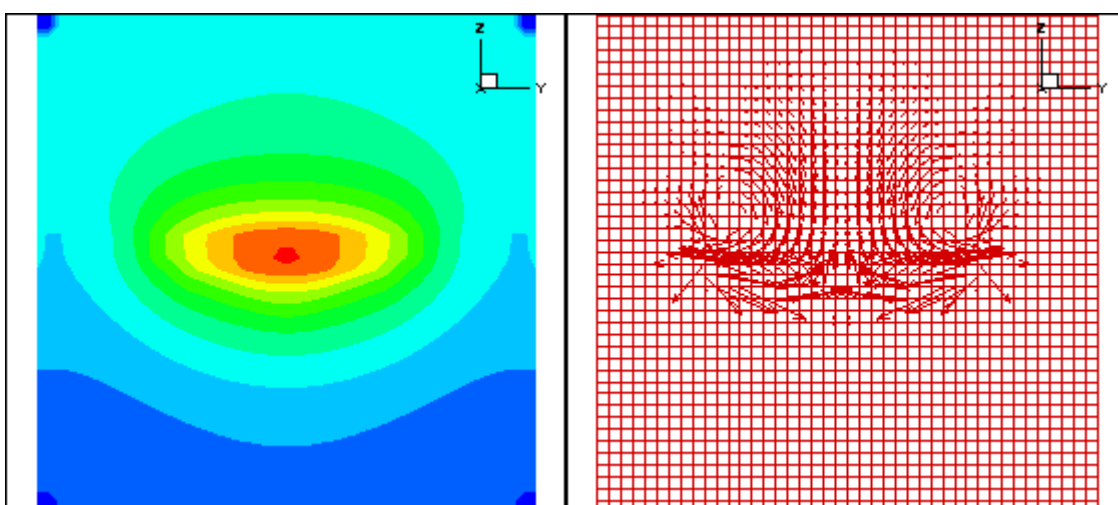
y-z 断面の速度分布



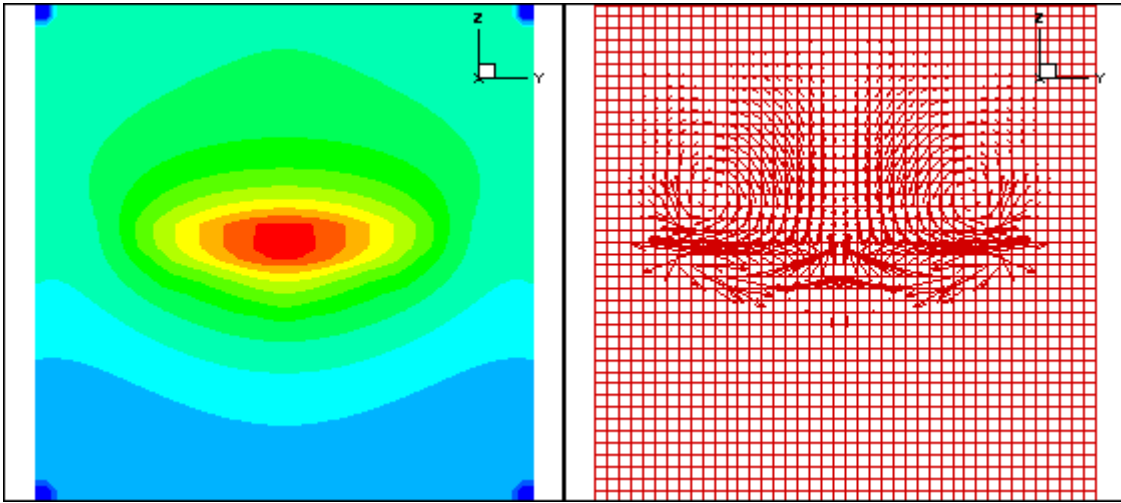
t = 0.02 sec



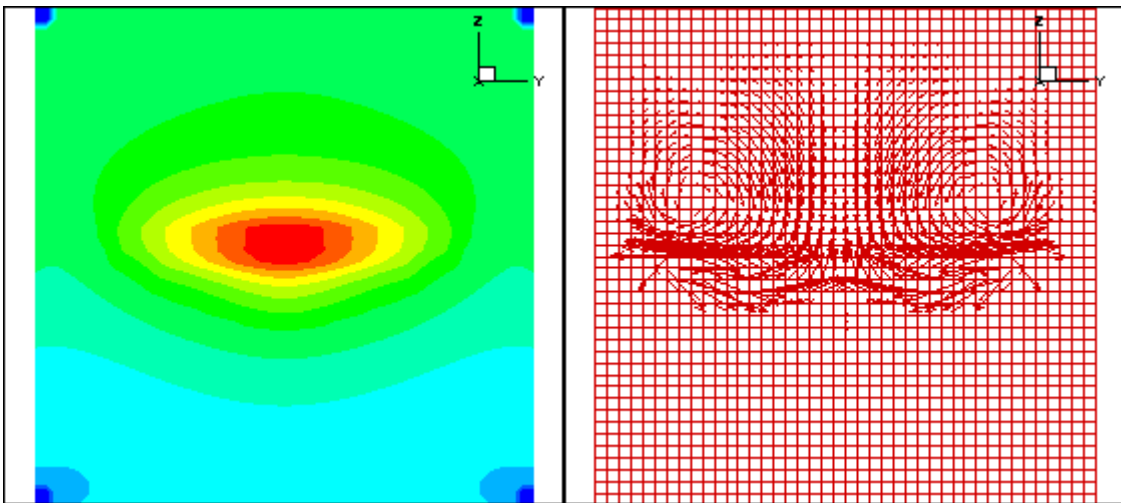
t = 0.03 sec



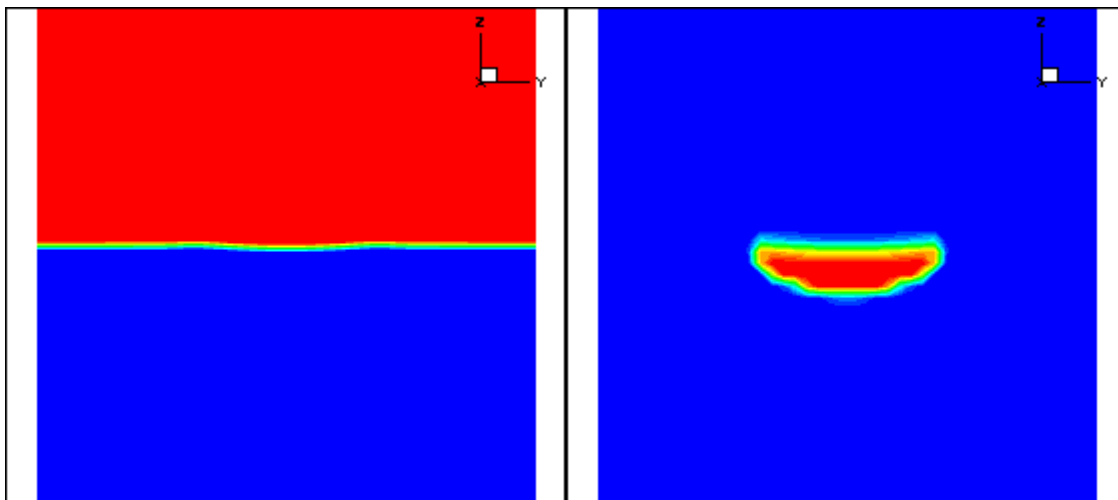
$t = 0.04 \text{ sec}$



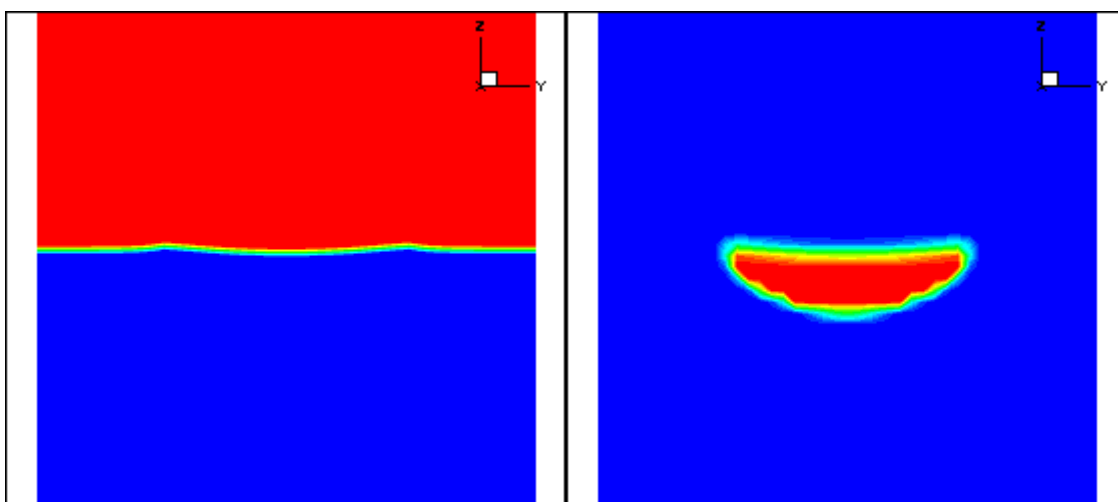
$t = 0.05 \text{ sec}$



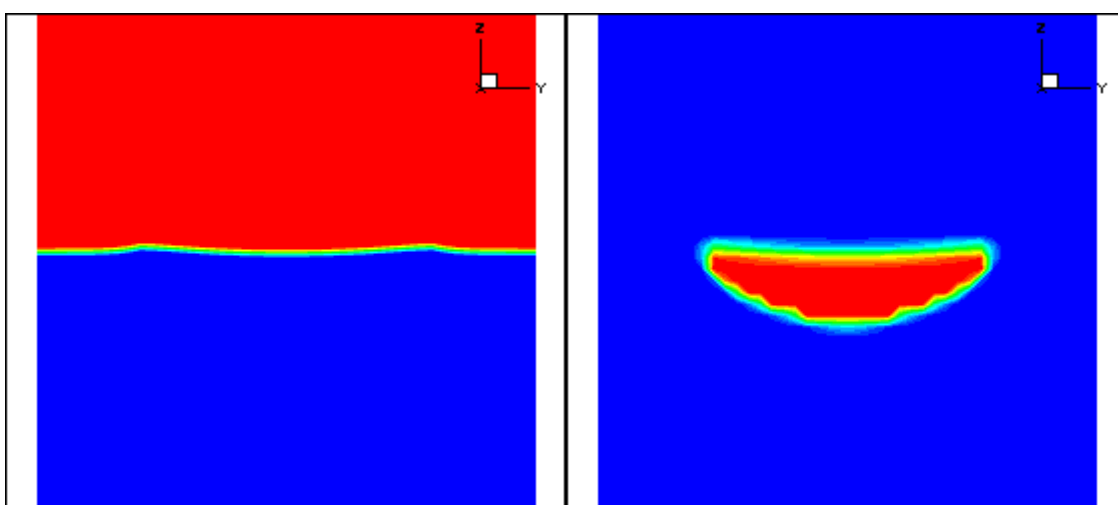
y-z 断面の気相-固液相界面 $t = 0.01 \text{ sec}$ y-z 断面の liquid mass fraction



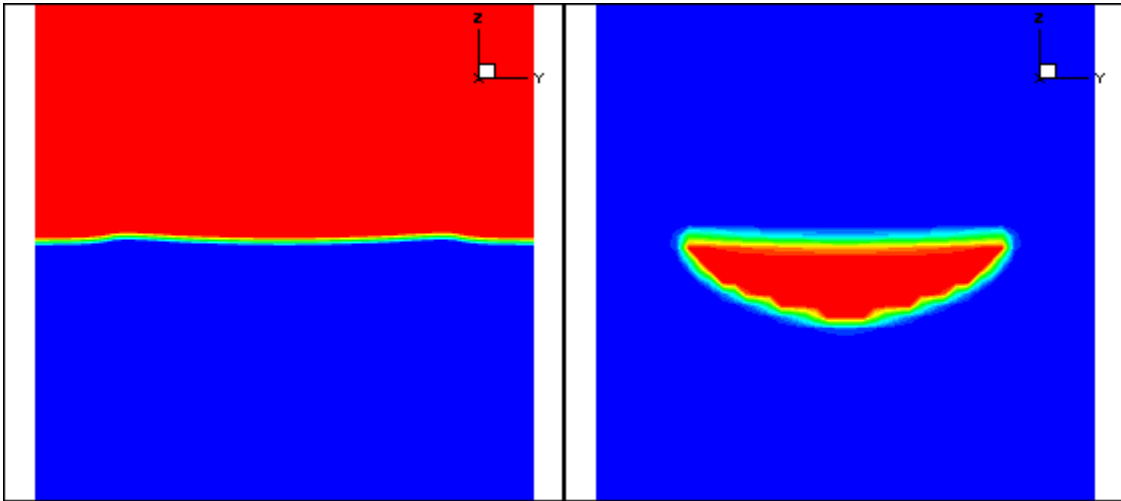
$t = 0.02 \text{ sec}$



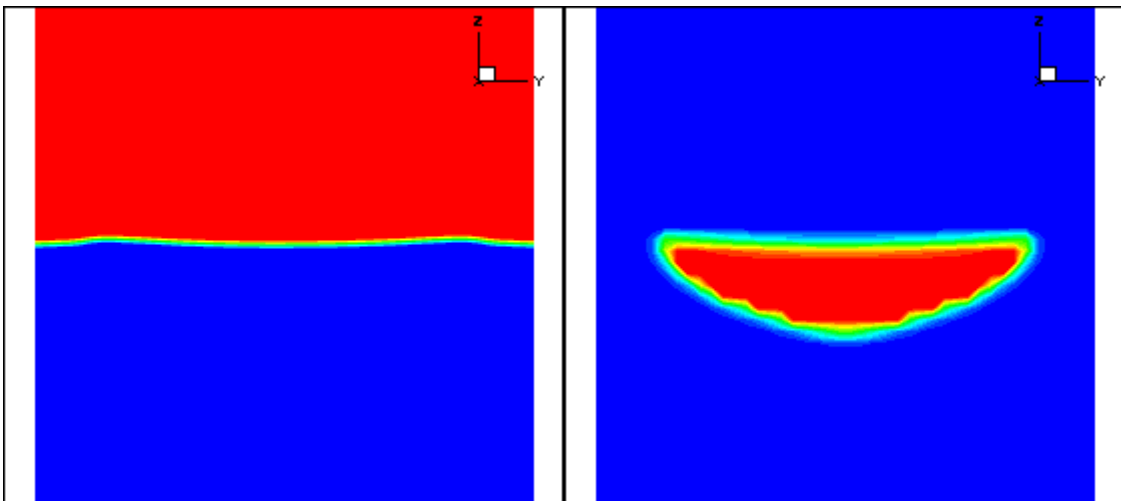
$t = 0.03 \text{ sec}$



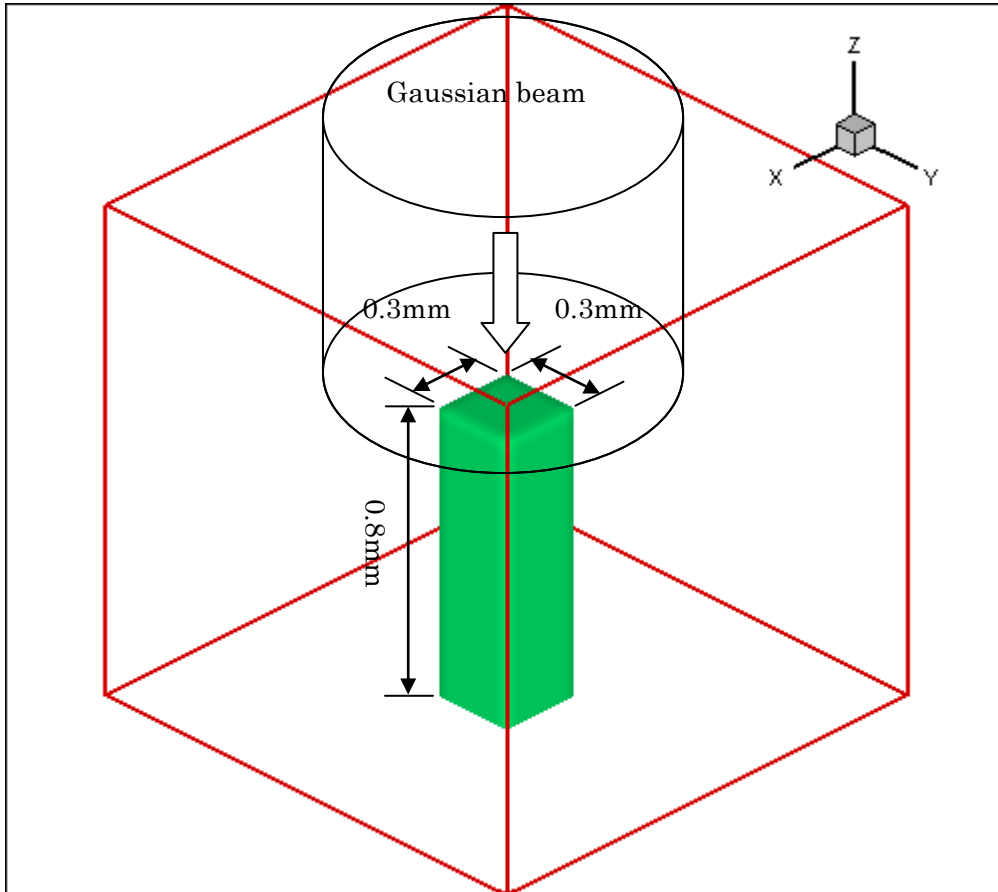
$t = 0.04 \text{ sec}$



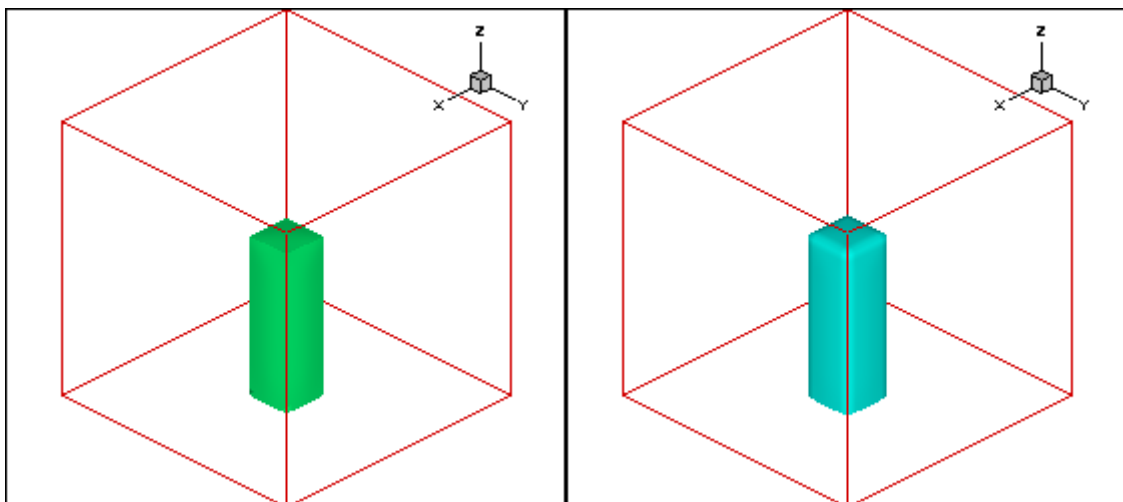
$t = 0.05 \text{ sec}$



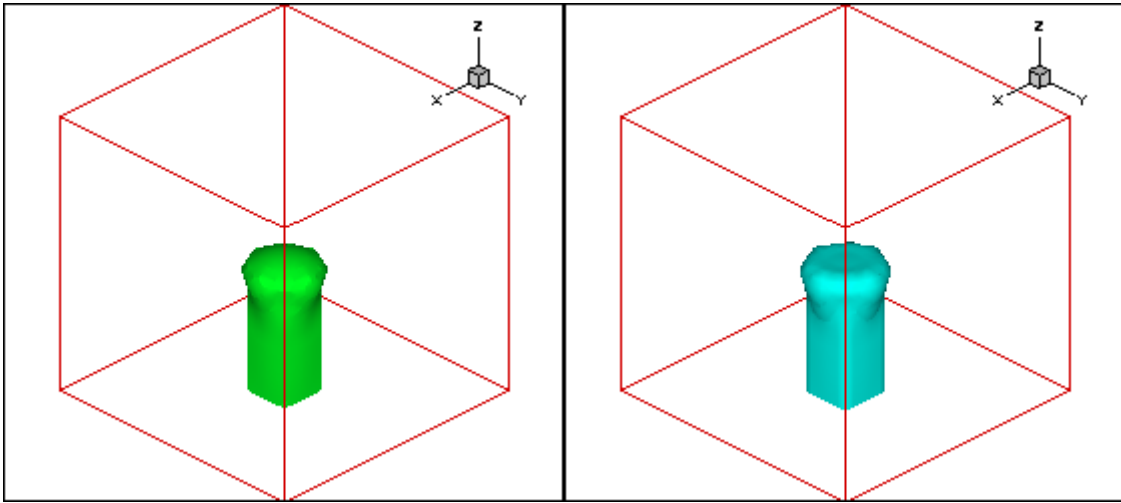
材料	Fe-C(0.1wt%)
レーザーパワー	100W
Beam	Gaussian beam
w_0	1.0mm



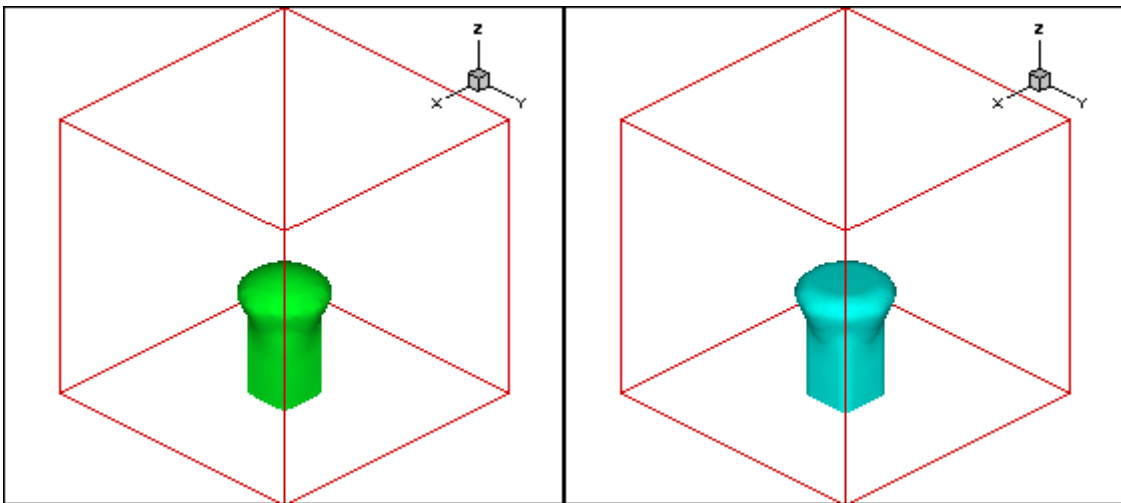
気相-固液相界面 $t = 0.01 \text{ sec}$ solid mass fraction の 0.25 等値面



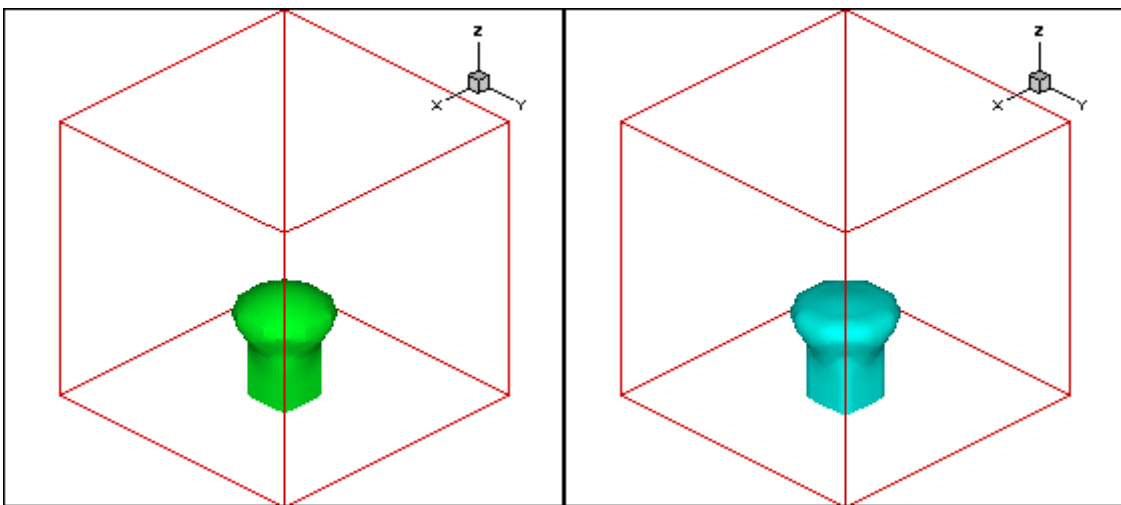
$t = 0.05 \text{ sec}$



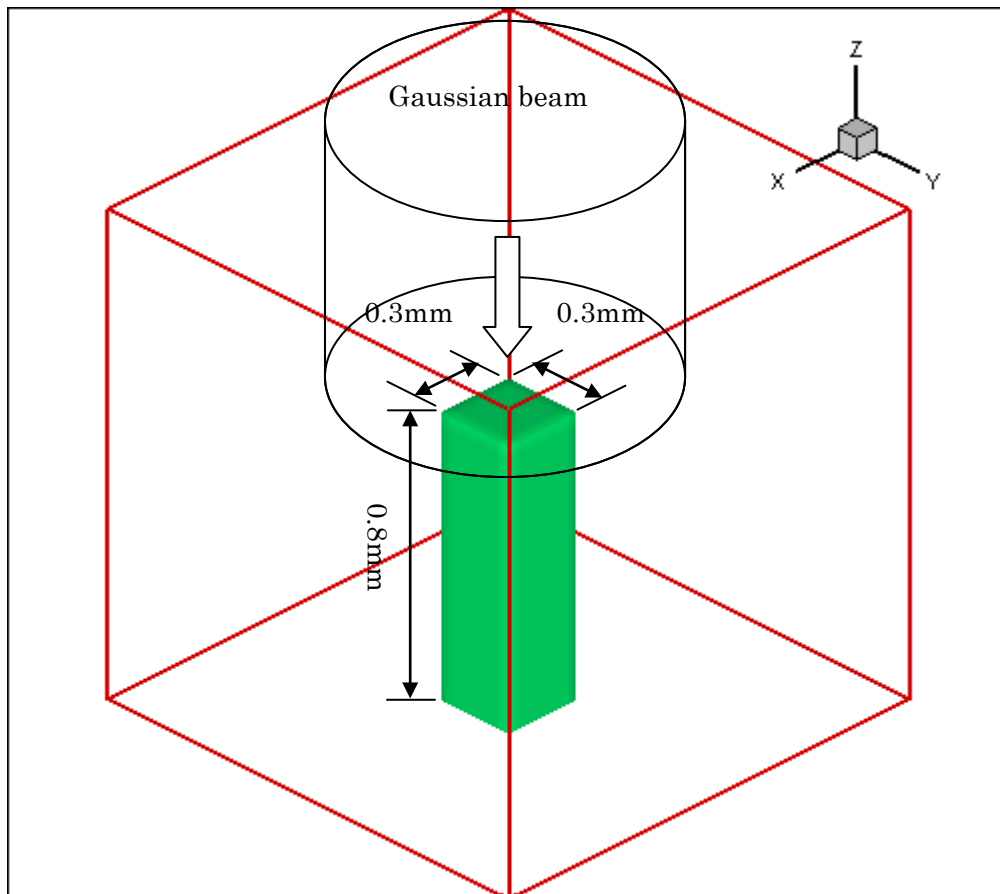
$t = 0.06 \text{ sec}$



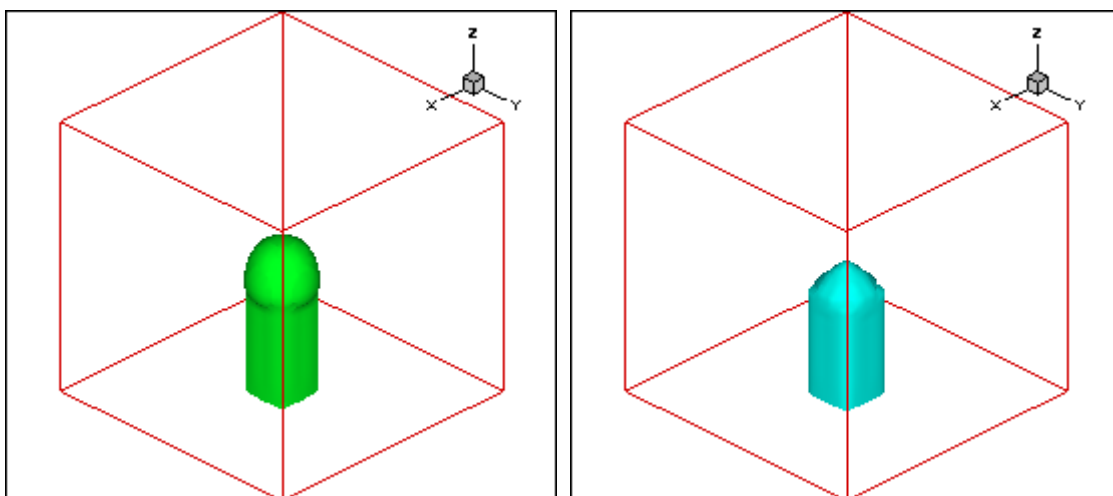
$t = 0.07 \text{ sec}$



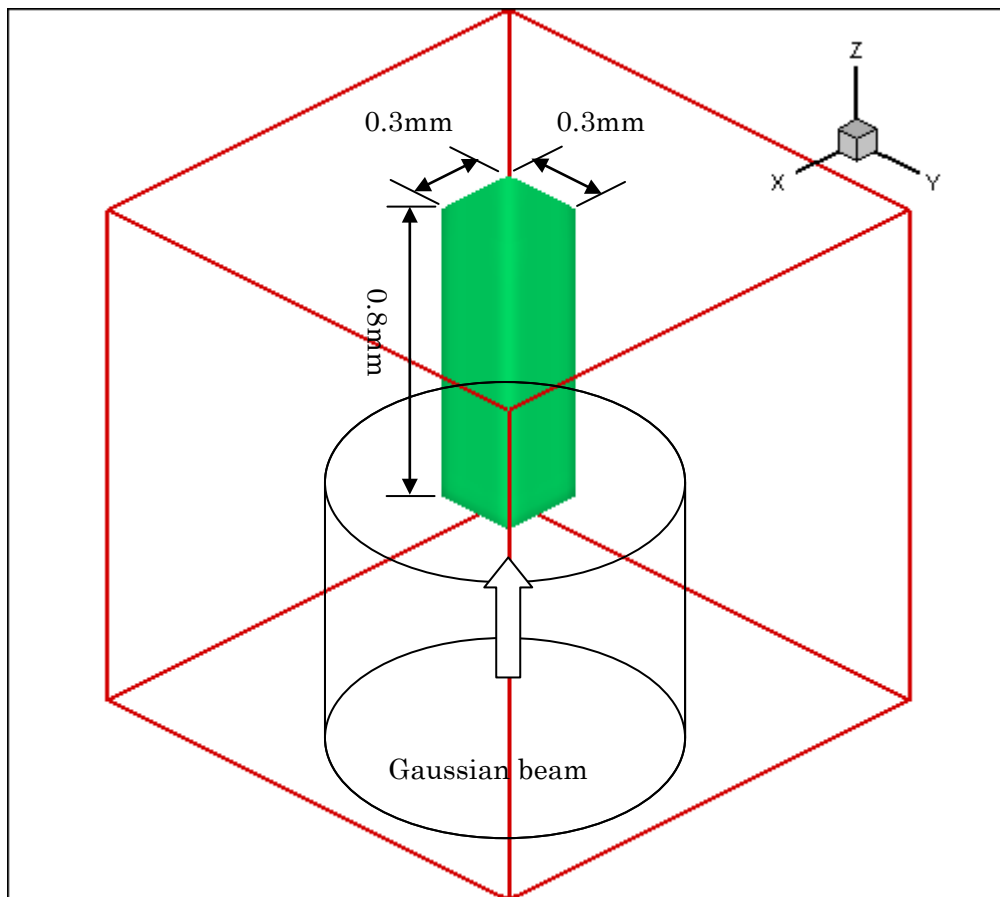
材料	Fe-C(0.1wt%)
レーザーパワー	10kW
Beam	Gaussian beam
w_0	1.0mm



気相-固液相界面 $t = 0.001 \text{ sec}$ solid mass fraction の 0.25 等値面

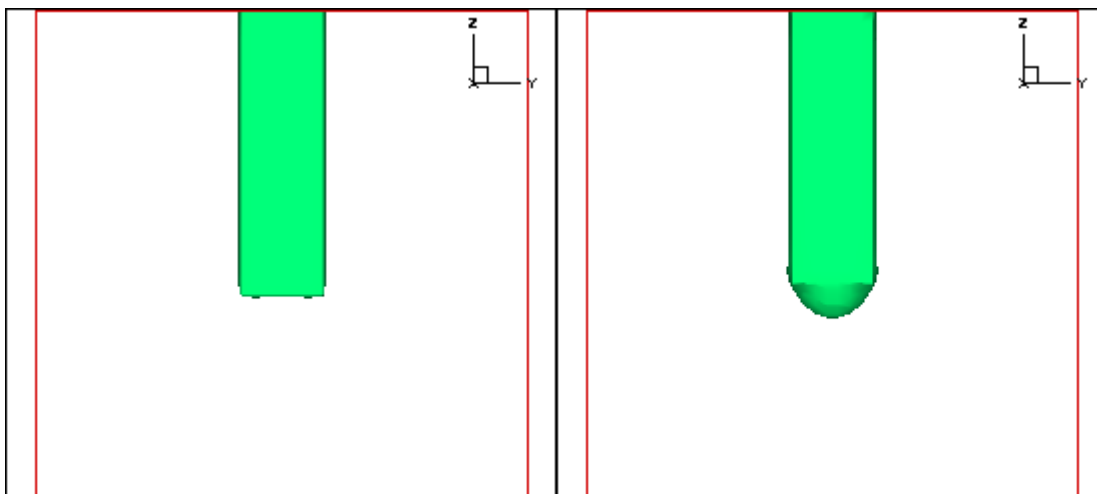


材料	Fe-C(0.1wt%)
レーザーパワー	10kW
Beam	Gaussian beam
w_0	1.0mm

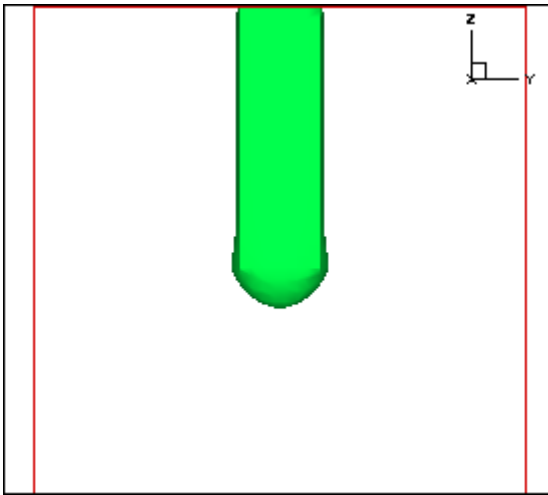


$t=0.0$ sec

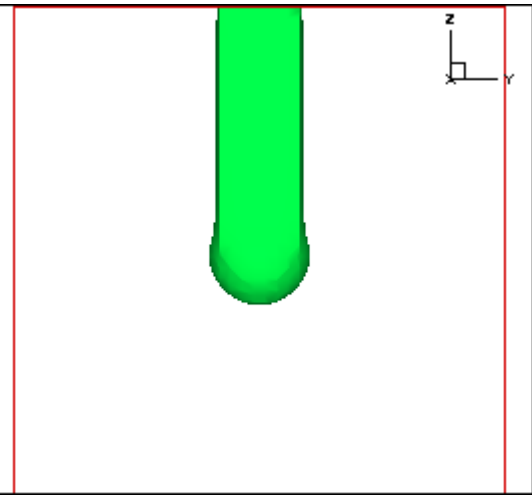
$t = 0.0002$ sec



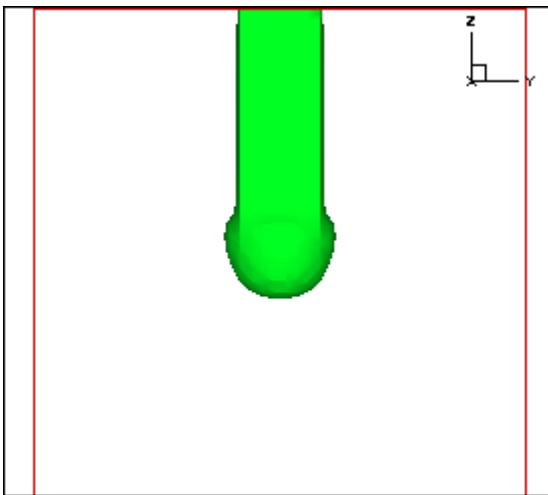
$t=0.0004$ sec



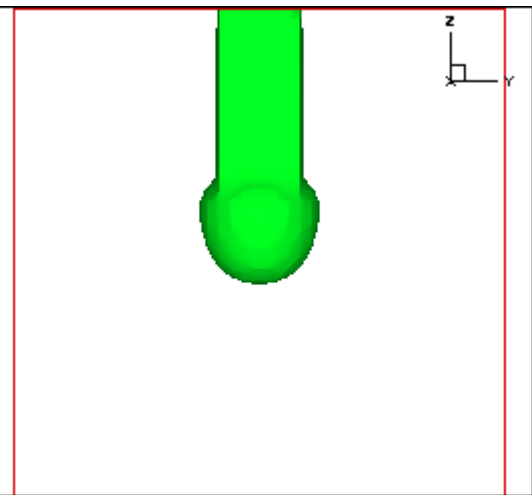
$t = 0.0006$ sec



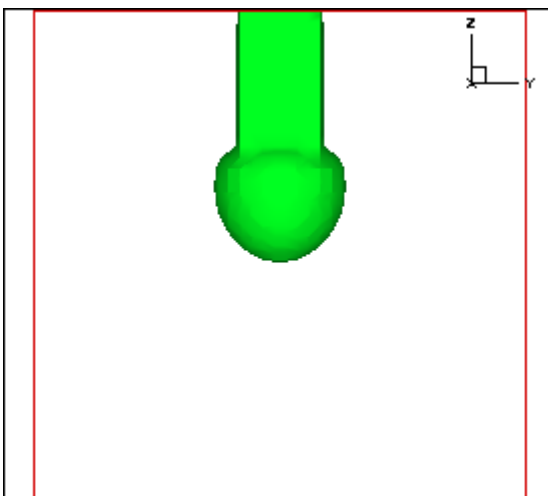
$t=0.0008$ sec



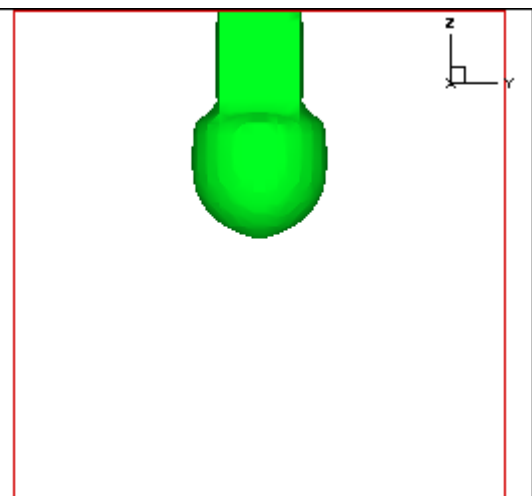
$t = 0.0010$ sec



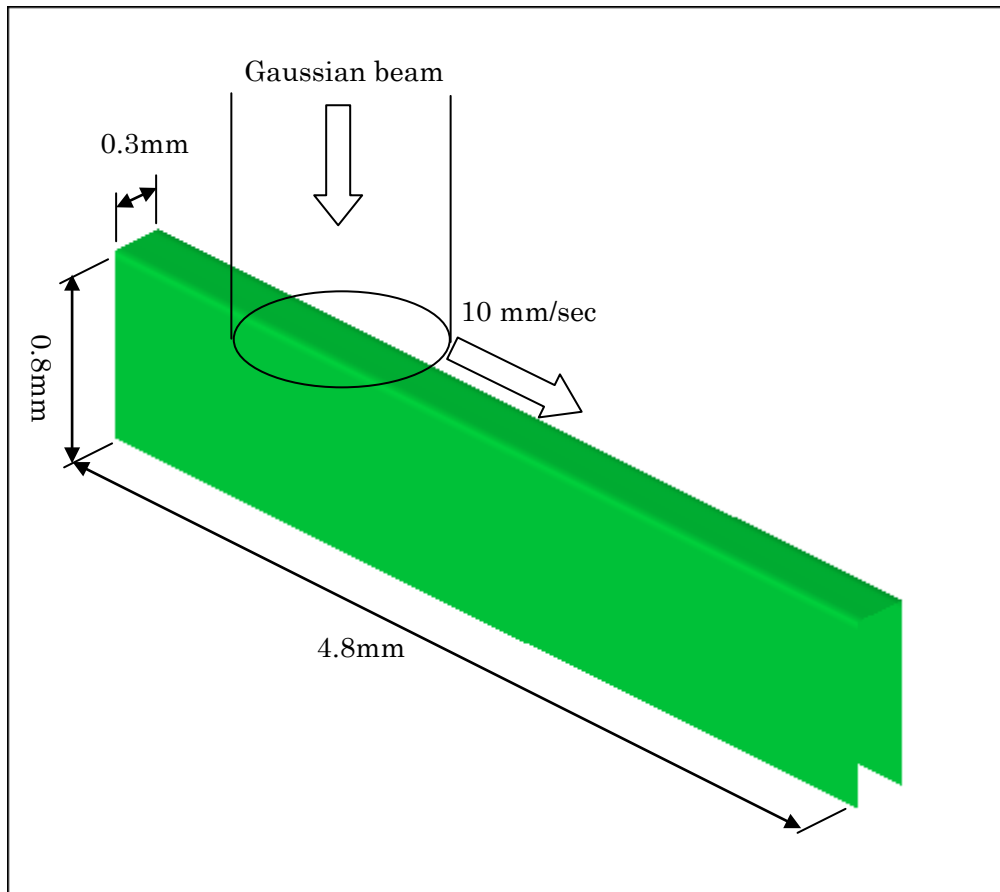
$t=0.0012$ sec



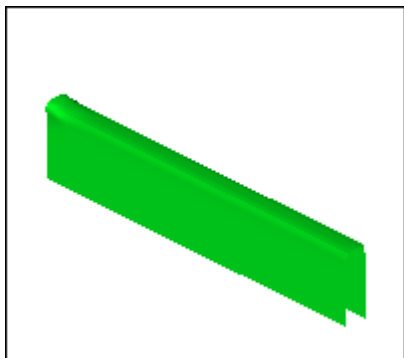
$t = 0.0014$ sec



材料	Fe-C(0.1wt%)
レーザーパワー	100W
Beam	Gaussian beam
w_0	1.2mm

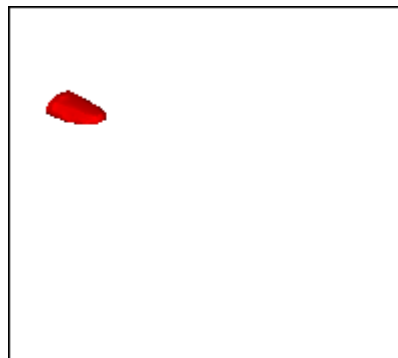


気相-固液相界面

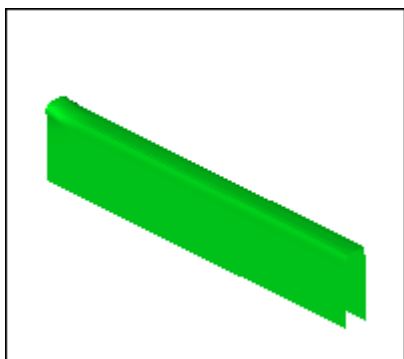


t = 0.02 sec

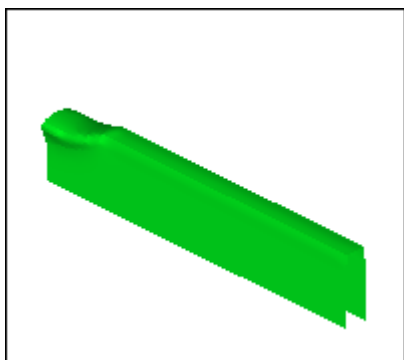
Solidus 温度等値面



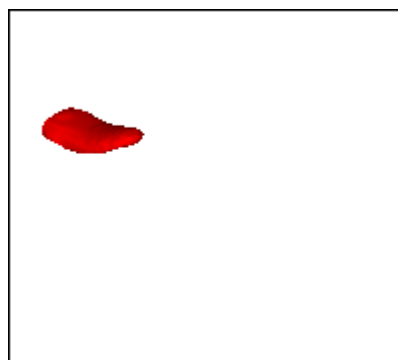
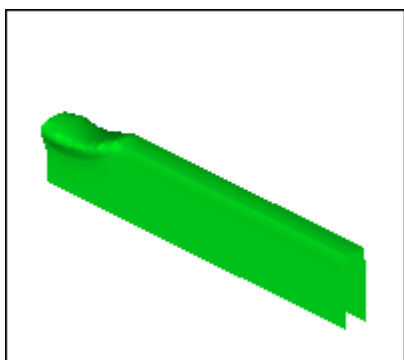
t = 0.04 sec



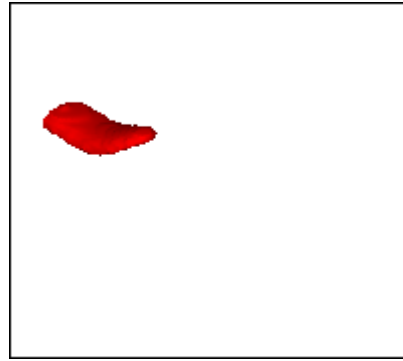
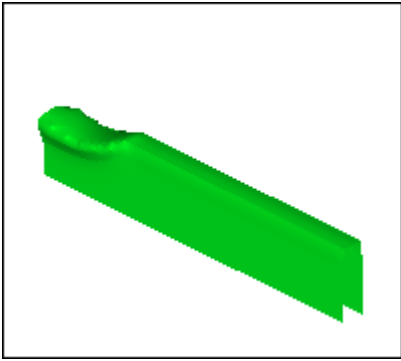
t = 0.06 sec



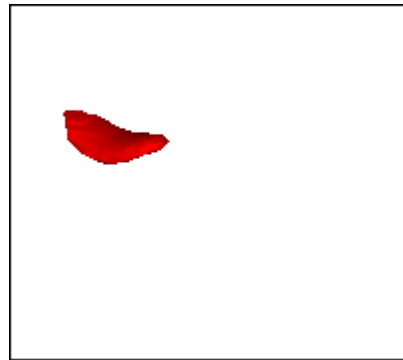
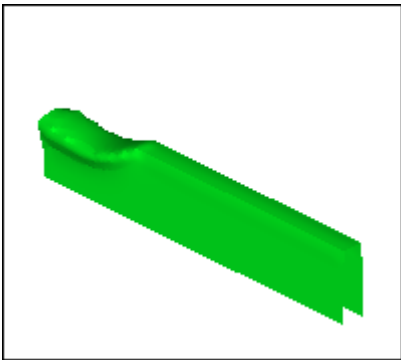
t = 0.08 sec



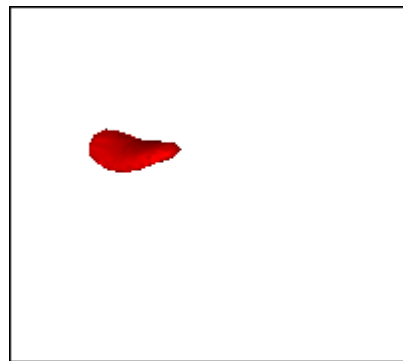
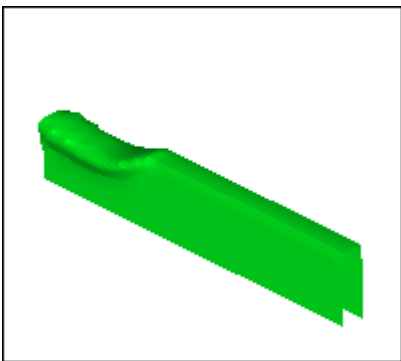
$t = 0.10 \text{ sec}$



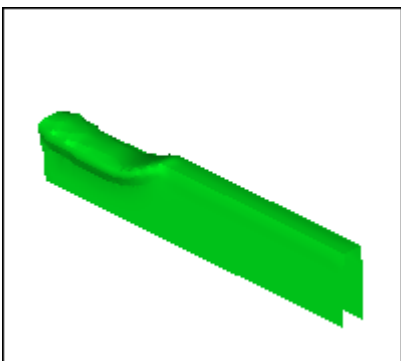
$t = 0.12 \text{ sec}$



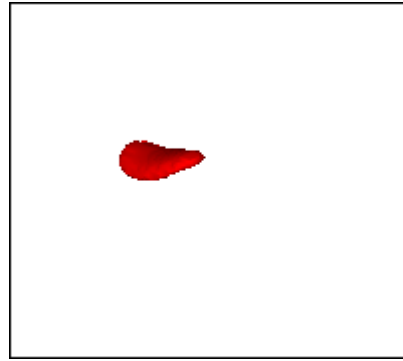
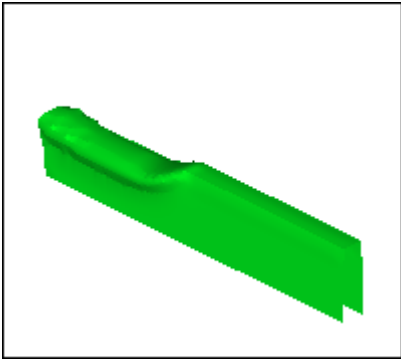
$t = 0.14 \text{ sec}$



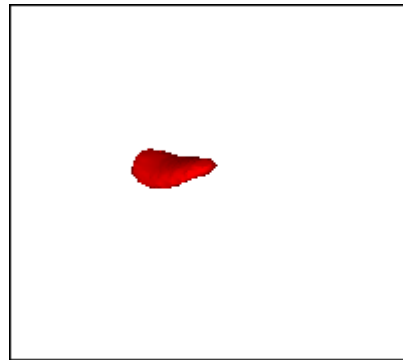
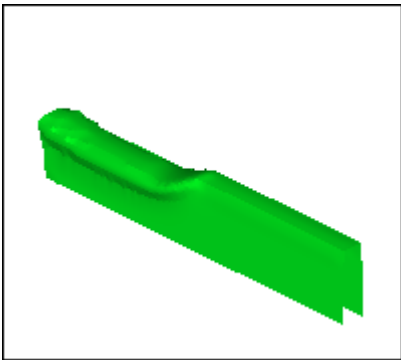
$t = 0.16 \text{ sec}$



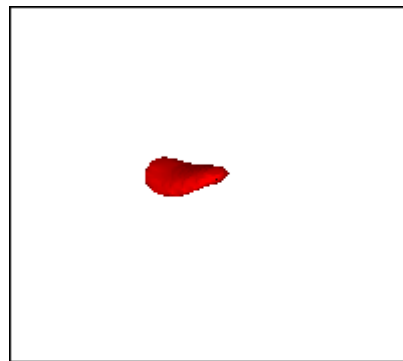
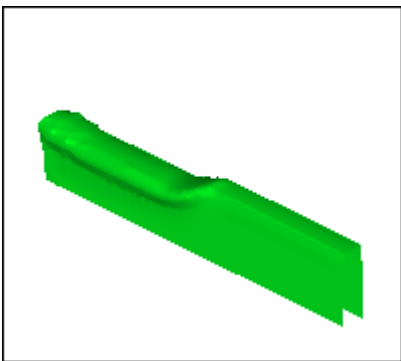
$t = 0.18 \text{ sec}$



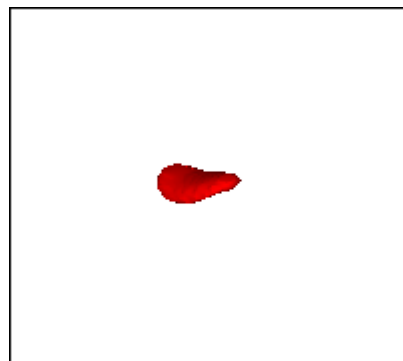
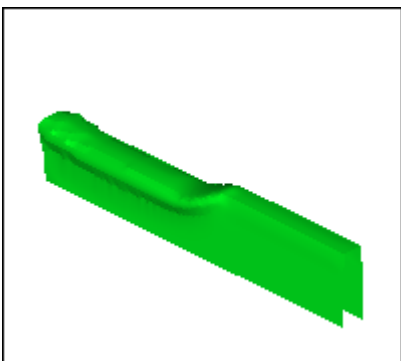
$t = 0.20 \text{ sec}$



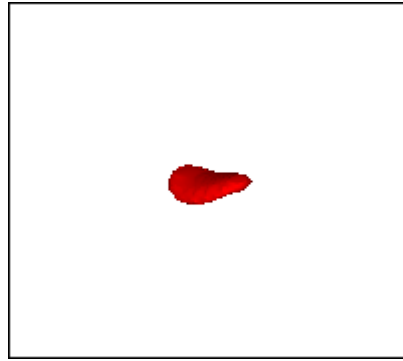
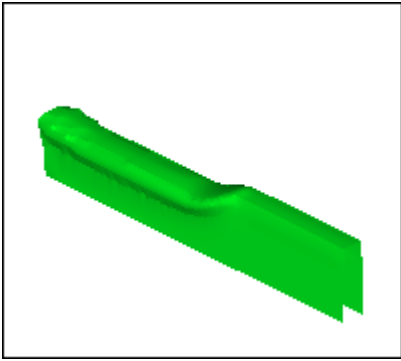
$t = 0.22 \text{ sec}$



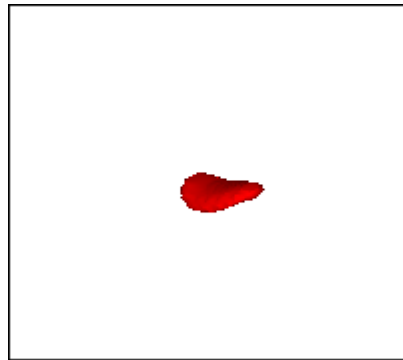
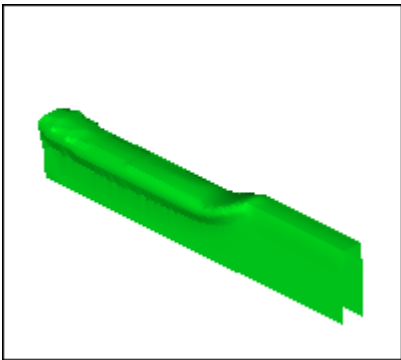
$t = 0.24 \text{ sec}$



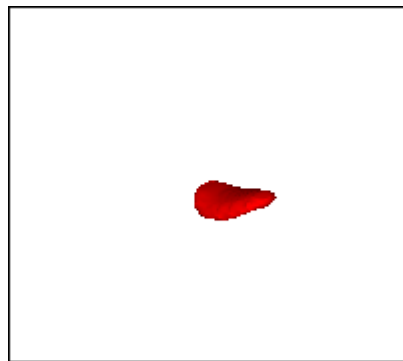
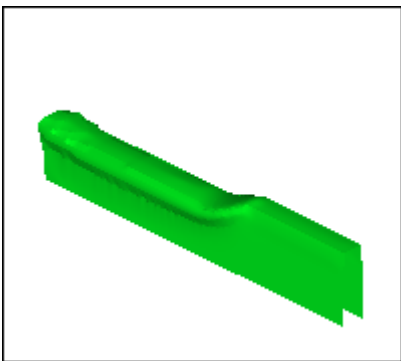
t = 0.26 sec



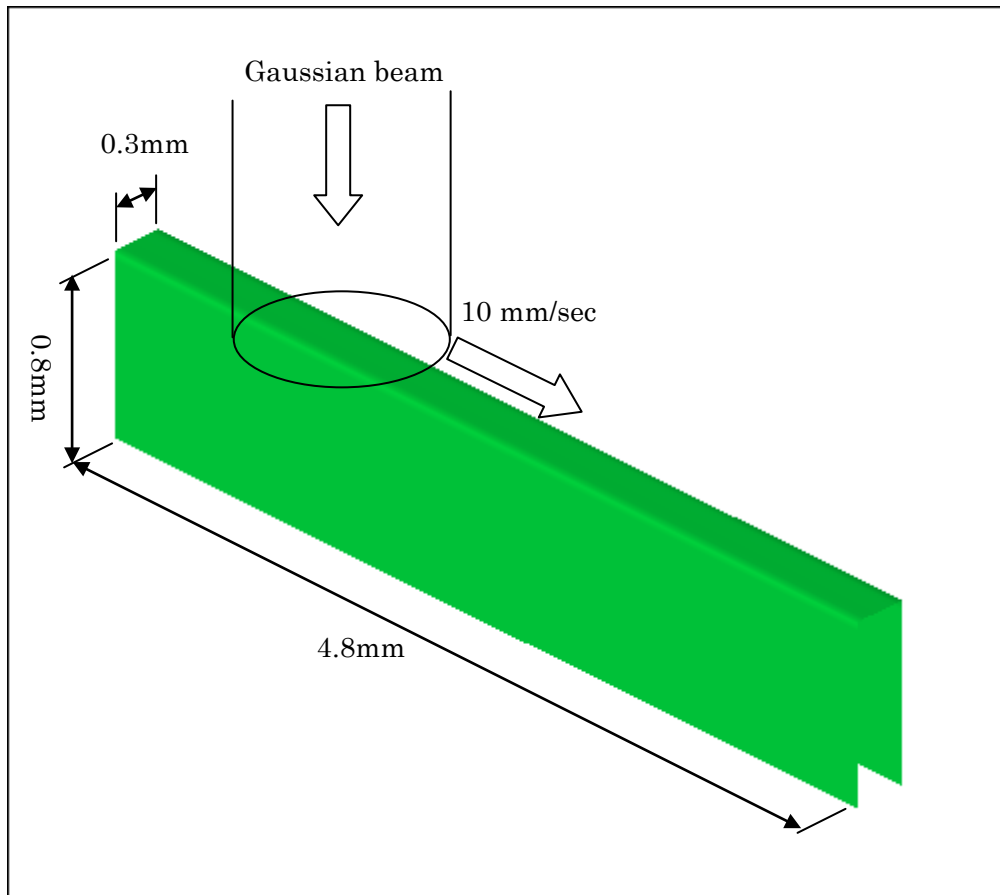
t = 0.28 sec



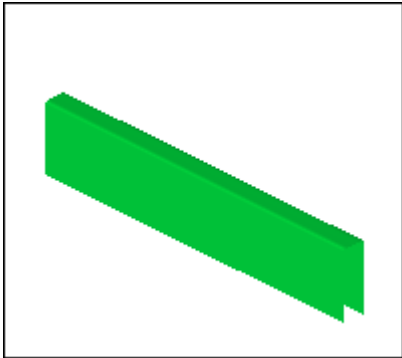
t = 0.30 sec



材料	鉄
レーザーパワー	150W
Beam	Gaussian beam
w_0	1.2mm

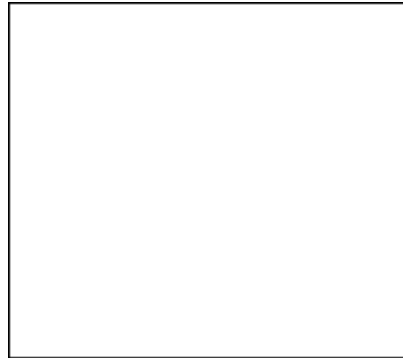


気相-固液相界面

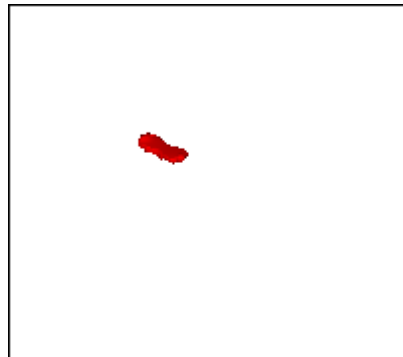
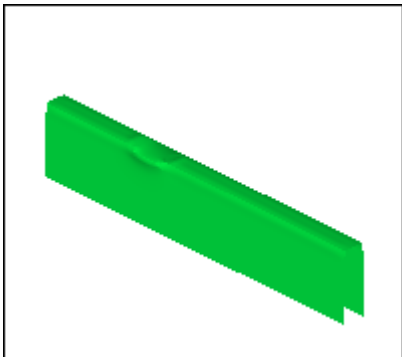


$t = 0.01 \text{ sec}$

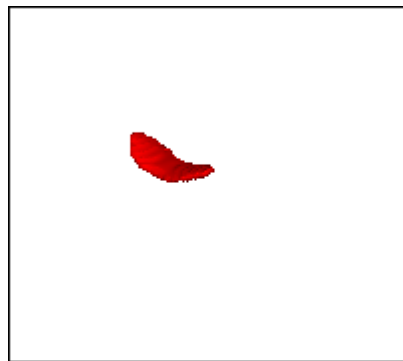
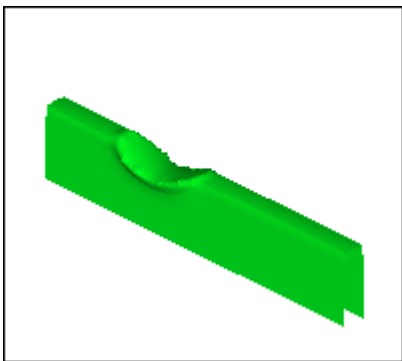
融点等値面



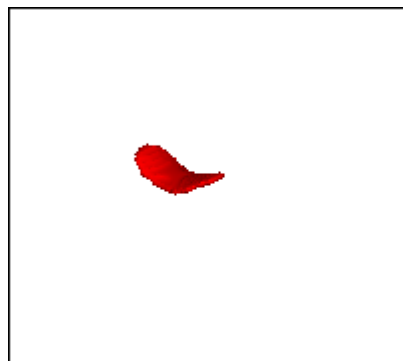
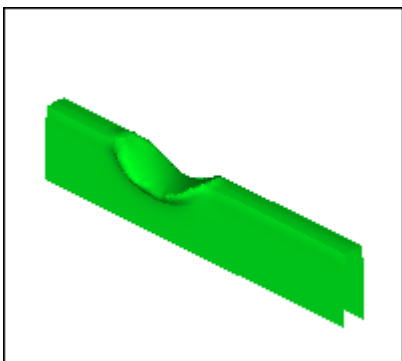
$t = 0.02 \text{ sec}$



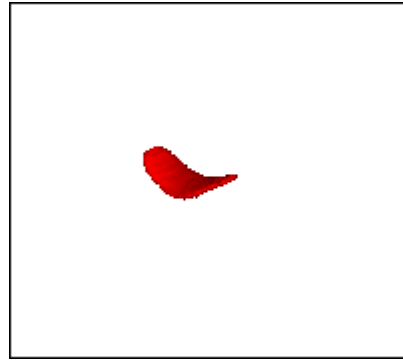
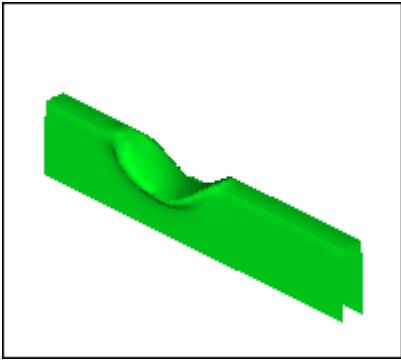
$t = 0.04 \text{ sec}$



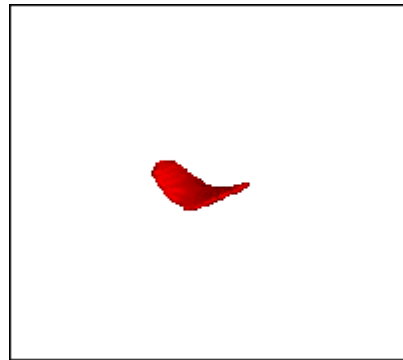
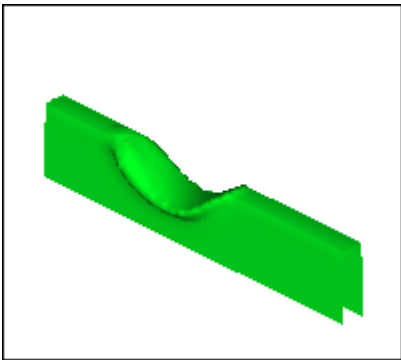
$t = 0.06 \text{ sec}$



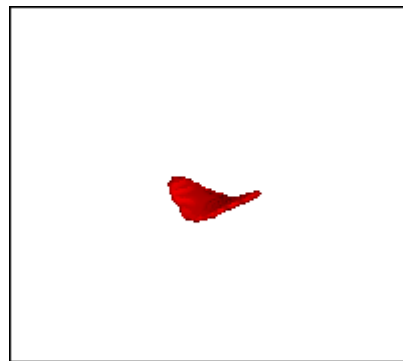
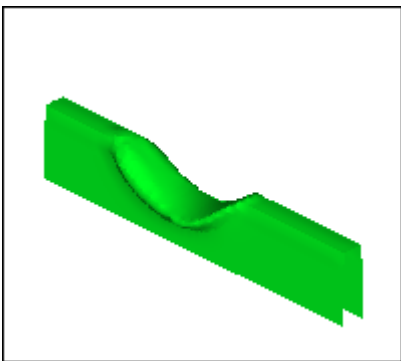
$t = 0.08 \text{ sec}$



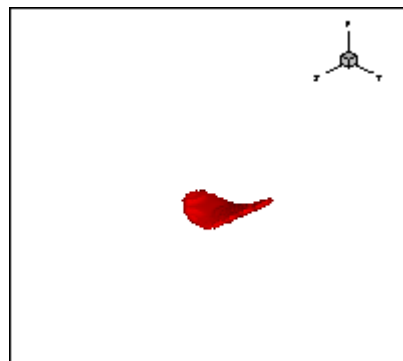
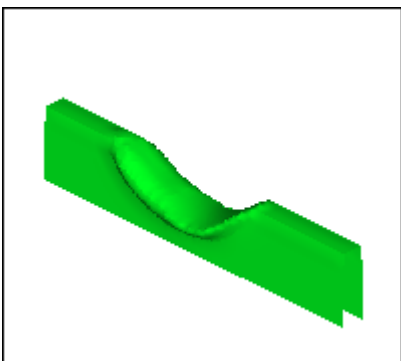
$t = 0.10 \text{ sec}$



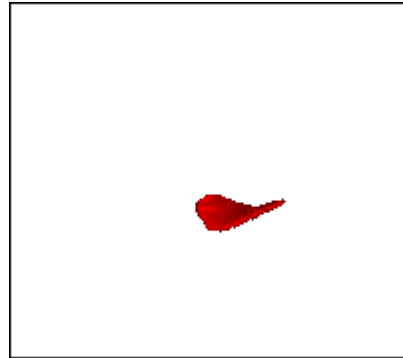
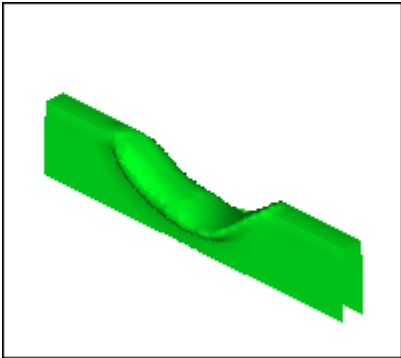
$t = 0.12 \text{ sec}$



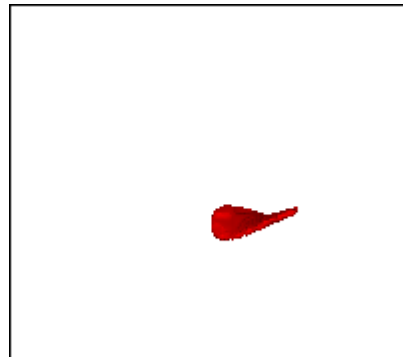
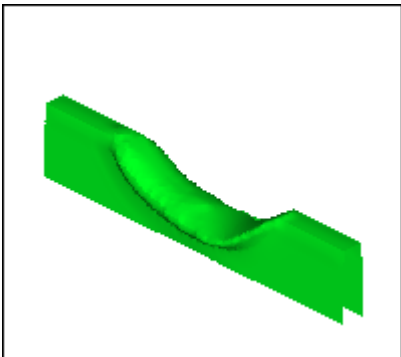
$t = 0.14 \text{ sec}$



$t = 0.16 \text{ sec}$



$t = 0.18 \text{ sec}$



$t = 0.20 \text{ sec}$

